
SAT
San Antonio International Airport
VISION 2050
A Flight Plan for San Antonio's Future
Briefing for:
Technical Advisory Committee
Meeting #3
May 4, 2010
AECOM
in association with:
Jacobs Consultancy
Michael Gallis & Associates
Sunland Group
KGB Texas
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Agenda

- Progress to Date
- Alternatives Development and Evaluation Process
- Airfield Alternatives
- Terminal Alternatives
- Landside Alternatives
- Preliminary Recommendation
- Public Meeting Outreach Coordination
- Project Next Steps




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Progress to Date

Master Plan Workflow




NEEDS

Existing Conditions and Issues

Inventory assembly and review

Aviation Demand Forecasts

Estimate short, medium and long term aeronautical activity that is likely to occur at the Airport

Goal Setting and Visioning

Community leader meetings

Committee Input
Ad Hoc Regional Committee
Technical Advisory Committee
Community Advisory Committee

May 2009 – December 2009

Demand/Capacity and Facility Requirements

Identify future facilities needed to accommodate demand

SOLUTIONS

Alternatives Development and Evaluation

Identify and evaluate all development alternatives to address requirements

Committee Input
Ad Hoc Regional Committee
Technical Advisory Committee
Community Advisory Committee

Public Meeting

January 2010 – July 2010

Recommended Development Alternative

Prepare a comprehensive and financially feasible implementation plan

DOCUMENTATION

Final Documentation

Final report
Executive summary
Airport layout plan
Final presentation

Committee Review
Ad Hoc Regional Committee
Technical Advisory Committee
Community Advisory Committee

City Council

Public Meeting

July 2010 – January 2011

Follow-Up to February Meetings

- **Forecast Assumptions**
  - Committee members requested a technical memorandum on the assumptions used to develop the aviation forecasts

    → Requested information was posted on Airport website on April 14th and distributed on April 26th




Forecast Assumptions

Inputs to Traffic Forecasts

- National economic outlook
- Socioeconomic outlook for the San Antonio Region
- San Antonio Region economic outlook and major Industries
  - Healthcare/bioscience
  - Information technology
  - Aerospace
  - Tourism
  - Military
- SAT historical traffic and trends

Forecast Scenarios

- Prepared baseline, low-growth and high-growth forecast to account for inherent uncertainty of aviation demand forecasting

International Service

- Assumed that demand for nonstop international service would increase as traffic reaches levels that justify the addition of new nonstop international flights




Follow-Up to February Meetings

- **Air Service Trends**
  - Committee members requested information on past and current air service trends and destinations served

    → Requested information was posted on website on March 30th and is presented on the following slides




40 Non–Stop Destinations served from SAT in 2008

30 Non–Stop Destinations served from SAT in 2010

30 Non-Stop Destinations Served in April 2010

- SAT has had non-stop service to approximately 30 destinations in most years since 2000
- 40 non-stop destinations were offered in April 2008 as several new entrant airlines started serving the Airport in 2008 (ExpressJet, Spirit)
- Much of the service lost in 2010 had started in 2007-2008
- Service to several markets, particularly international destinations, may operate only a few times a month




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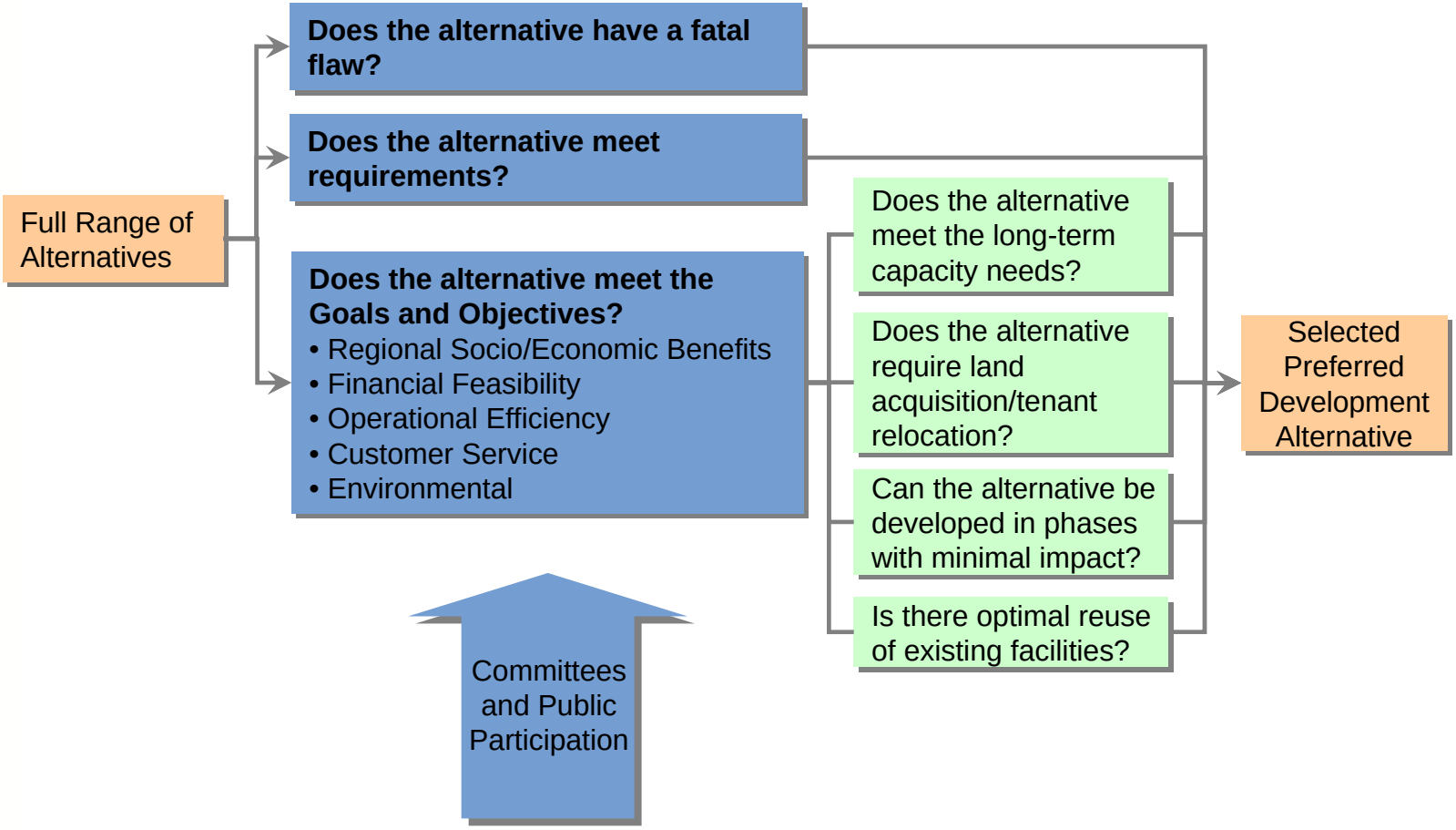
Alternatives Development and Evaluation Process

Alternatives Evaluation Methodology



Evaluation Criteria

Evaluation criteria were developed based on input from the Committees




Regional Socio/Economic Benefits

- Meets 2030 capacity needs
- Meets runway length requirements
- Allows long term growth for terminal / airfield
- Optimizes non-terminal land development
- Provides opportunity to serve as regional gateway
- Access/impact to regional rail system

Financial Feasibility

- Capital investment requirement
- Ability to develop incrementally
- Opportunities for non-airline revenue
- Requirement for land acquisition
- Impact to existing tenants (non-airline)

Evaluation Criteria (cont.)




Operational Efficiency

- Airfield configuration optimizes aircraft movement
- Promotes airline staff efficiency
- Roadways, curbside, parking meet capacity needs
- Efficient operation and maintenance requirements
- Flexibility of facility for multiple users
- Minimize impact of construction phasing

Customer Service

- Minimizes walking distances / vertical movements
- Sufficient space for passenger processing
- Allows for intuitive wayfinding
- Access to rental car facilities

Environmental

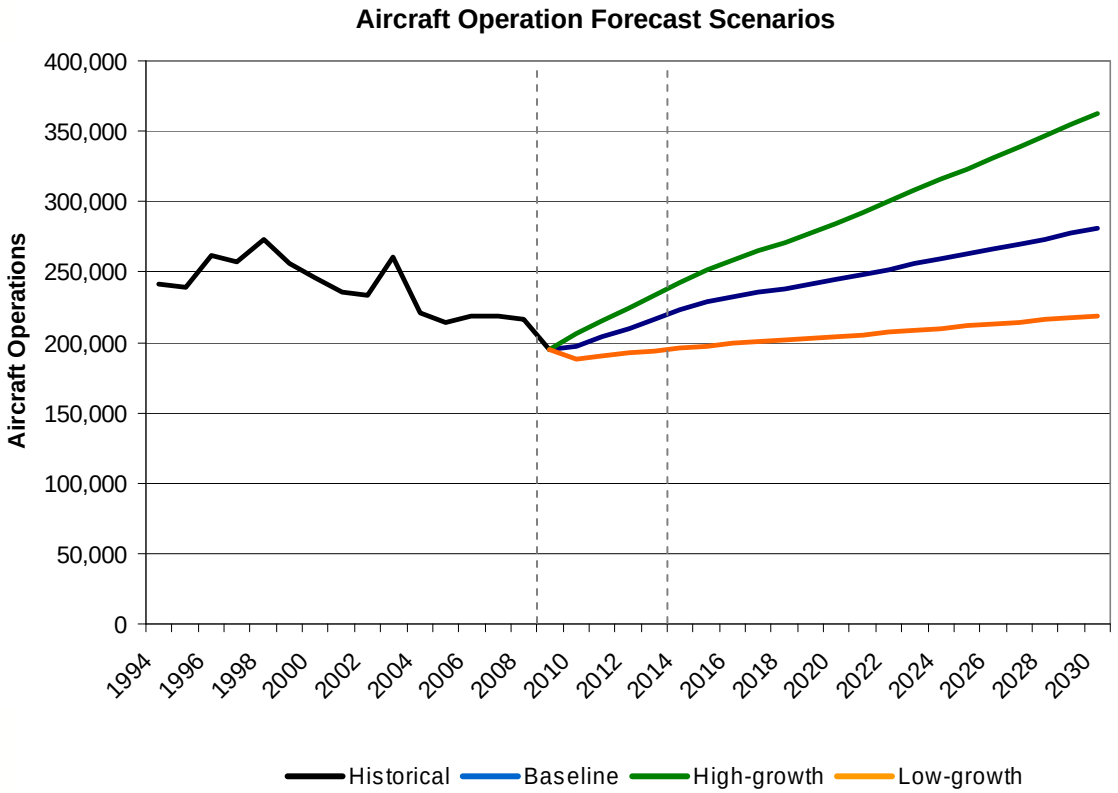
- Lifecycle resource use
- Reuse of existing facilities
- Impact on local environment
- Preservation of open space




Airfield Alternatives

- Aviation Forecast Results
- Airfield Requirements
- Baseline Airfield Facilities
- Airfield Development Alternatives
- Alternatives Evaluation
- Recommended Alternative

Aircraft Operations Forecasts



Number of operations declined by 10% in 2009. Baseline forecast projects a recovery to 2008 levels by 2014.

Commercial operations drives long-term growth as general aviation, military and air taxi level off.

Baseline forecast projects total operations long-term growth at 1.8%

OPERATIONS FORECASTS						
		Projections				Annual Growth Rate
Forecast	2009	2010	2015	2020	2030	2009-2030
Baseline	194,657	197,400	229,200	244,700	280,800	1.8%
High-growth	194,657	205,700	252,000	284,000	363,000	3.0%
Low-growth	194,657	188,600	197,700	204,000	219,000	0.6%

Peak Period Demand Forecast

PEAK PERIOD DEMAND FORECAST					
Forecast	2009	Projections			
		2010	2015	2020	2030
Annual aircraft operations	194,657	197,400	229,200	244,700	280,800
Peak month operations	16,857	17,500	20,320	21,690	24,890
Average day peak month operations	544	564	655	700	803

The number of operations for an average day of the peak month – July – will increase from its current level of 544 operations to 803 operations in 2030.

Fleet Mix Forecast

	Existing Fleet Mix	2030 Fleet Mix
Passenger Aircraft	**44.9%**	**56.4%**
Widebody (B767)	0.0%	0.5%
Narrowbody (A320, B737, MD-80)	35.2%	44.8%
Regional/Commuter (CRJ 200, CRJ 900, Embraer 175)	9.7%	11.1%
All-Cargo Aircraft	**3.3%**	**4.2%**
Widebody (A300, B767, B777)	1.0%	2.3%
Narrowbody (B737, B757)	1.9%	1.4%
Regional Commuter (Cessna 208)	0.4%	0.5%
Air Taxi/General Aviation: Single engine piston, multi-engine piston, turboprop, business jet	**49.9%**	**37.6%**
Military (C-130, T-34, T-38)	**1.9%**	**1.8%**

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Baseline Airfield Facilities

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Runway 12L-30R:

-5,519 feet long by 100 feet wide

-Only used by general aviation aircraft

Separation between Runways 12R-30L and 12L-30R:

-990 feet, allowing for simultaneous VFR operations

Runway 12R-30L:

-8,502 feet long by 150 feet wide

Runway 3-21 Extension:

-Runway being extended to 8,500 feet. Construction to be completed early 2012

Runway 3-21:

-7,505 feet long by 150 feet wide

Airfield Requirements




- **Master Plan improvements**
  - **Runway 12L-30R**
    Upgrade to air carrier runway
  - **Taxiway system efficiency**
    Targeted improvements to improve aircraft flows and interface with apron
  - **Navigational aid/visual aid**
    Add CAT I instrumentation to Runway 21
- **Beyond the Master Plan (post-2030 improvements)**
  - **Runway length**
    10,000ft runway needed to accommodate larger aircraft for long-haul flights

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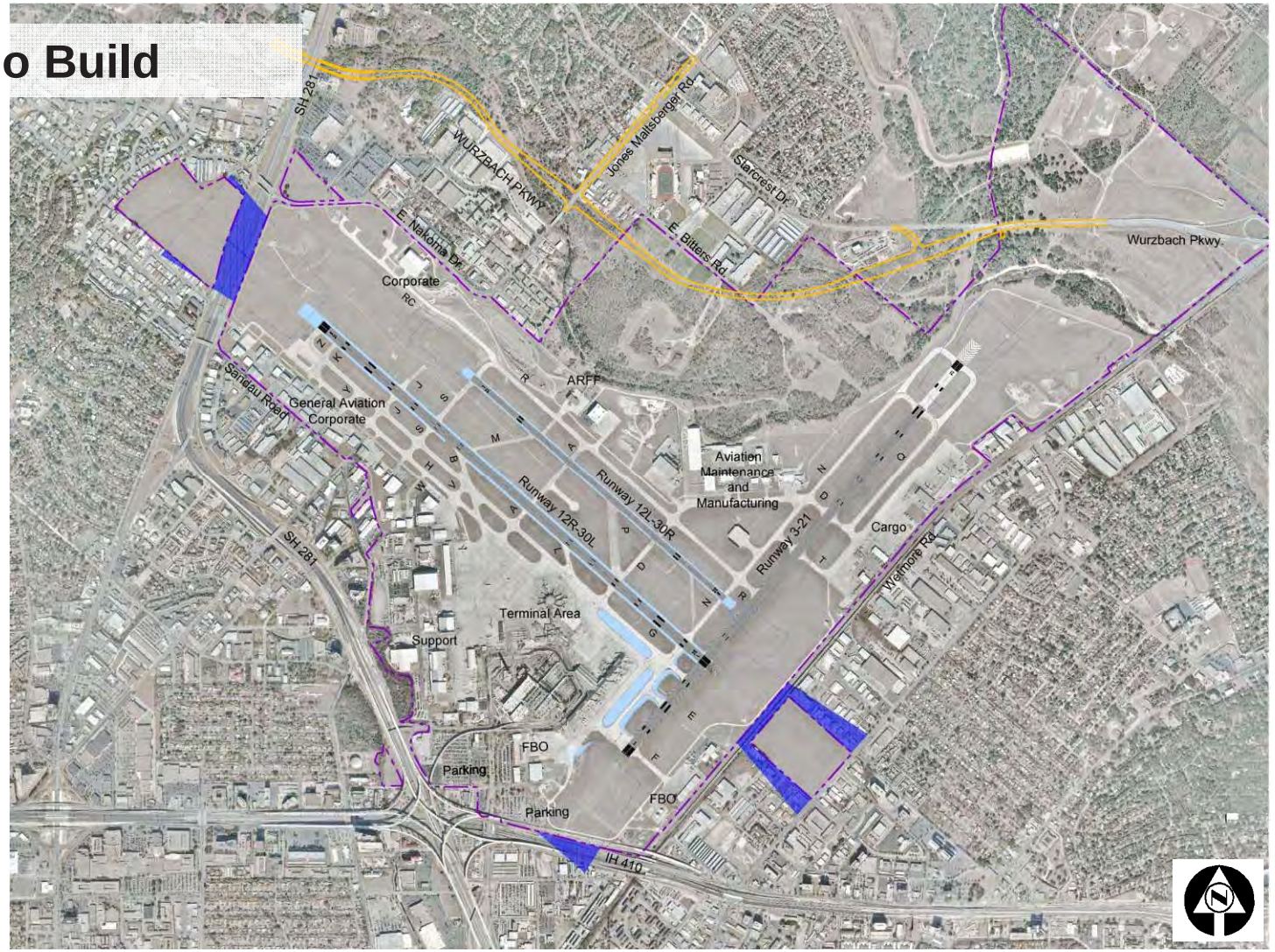
Alternative 1

No Build



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Alternative 2

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Extend Runway 12R-30L to 10,500 feet

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Alternative 3

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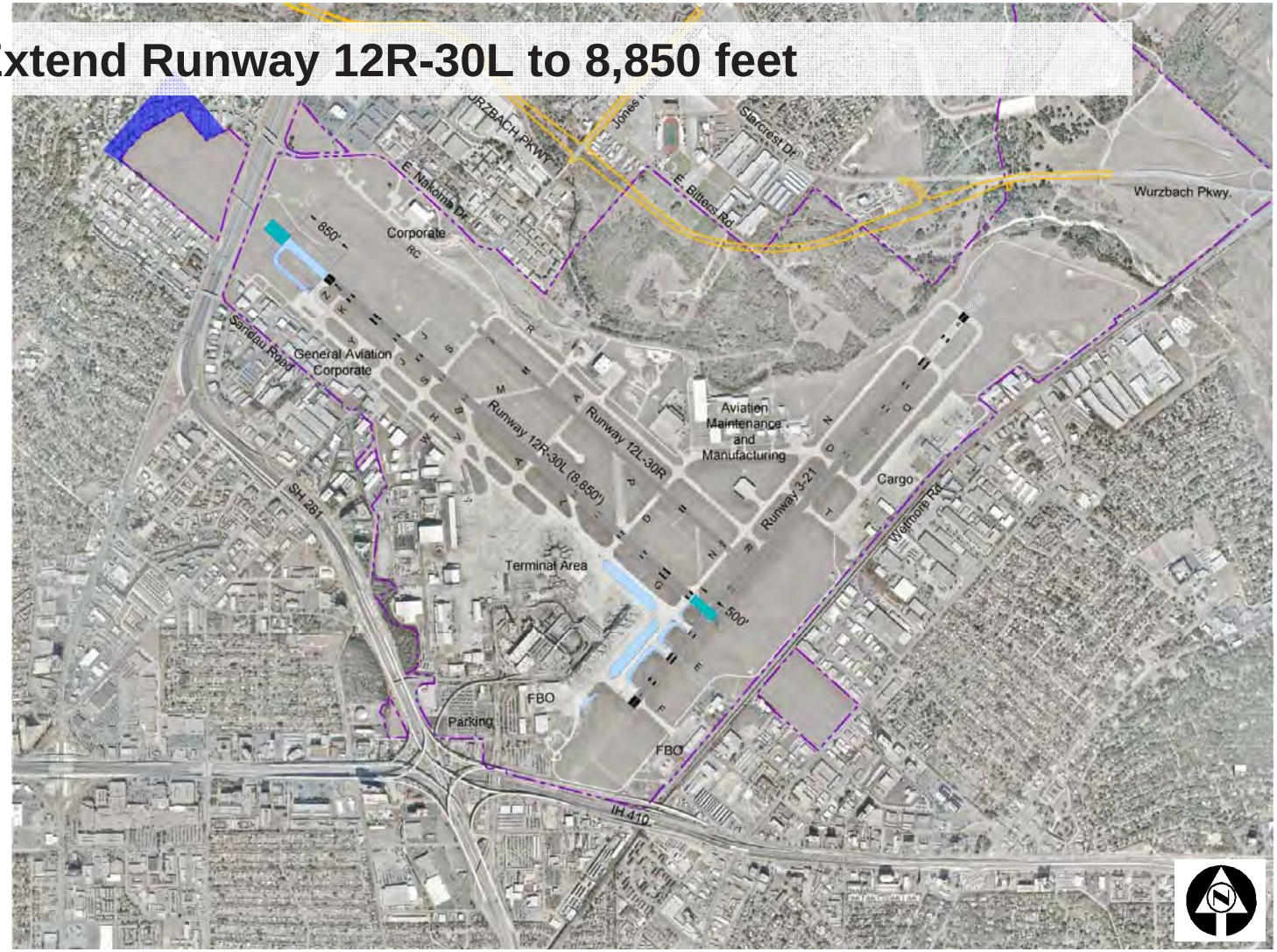
Extend Runway 12R-30L to 8,850 feet



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Alternative 4

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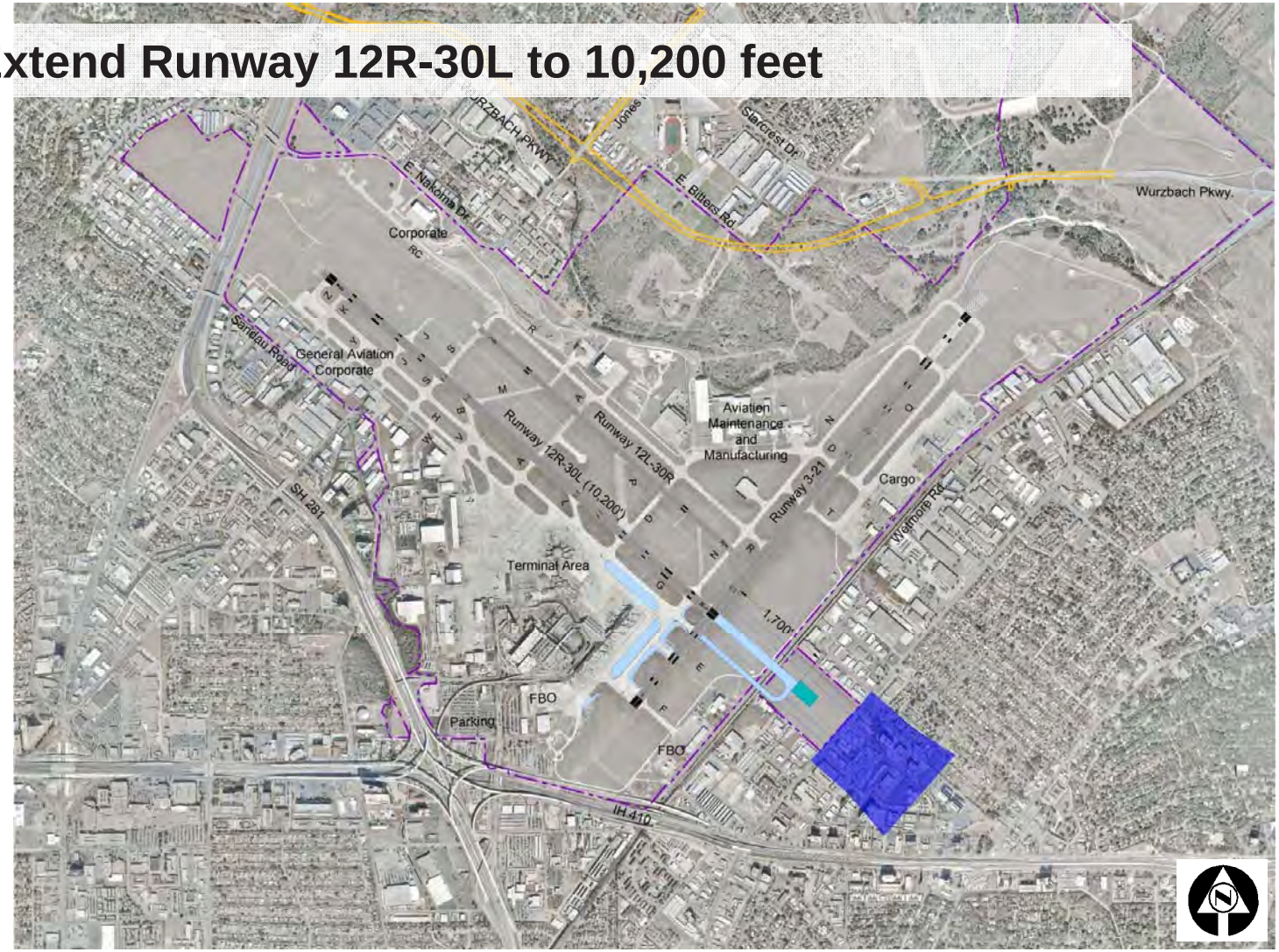
Extend Runway 12R-30L to 10,200 feet



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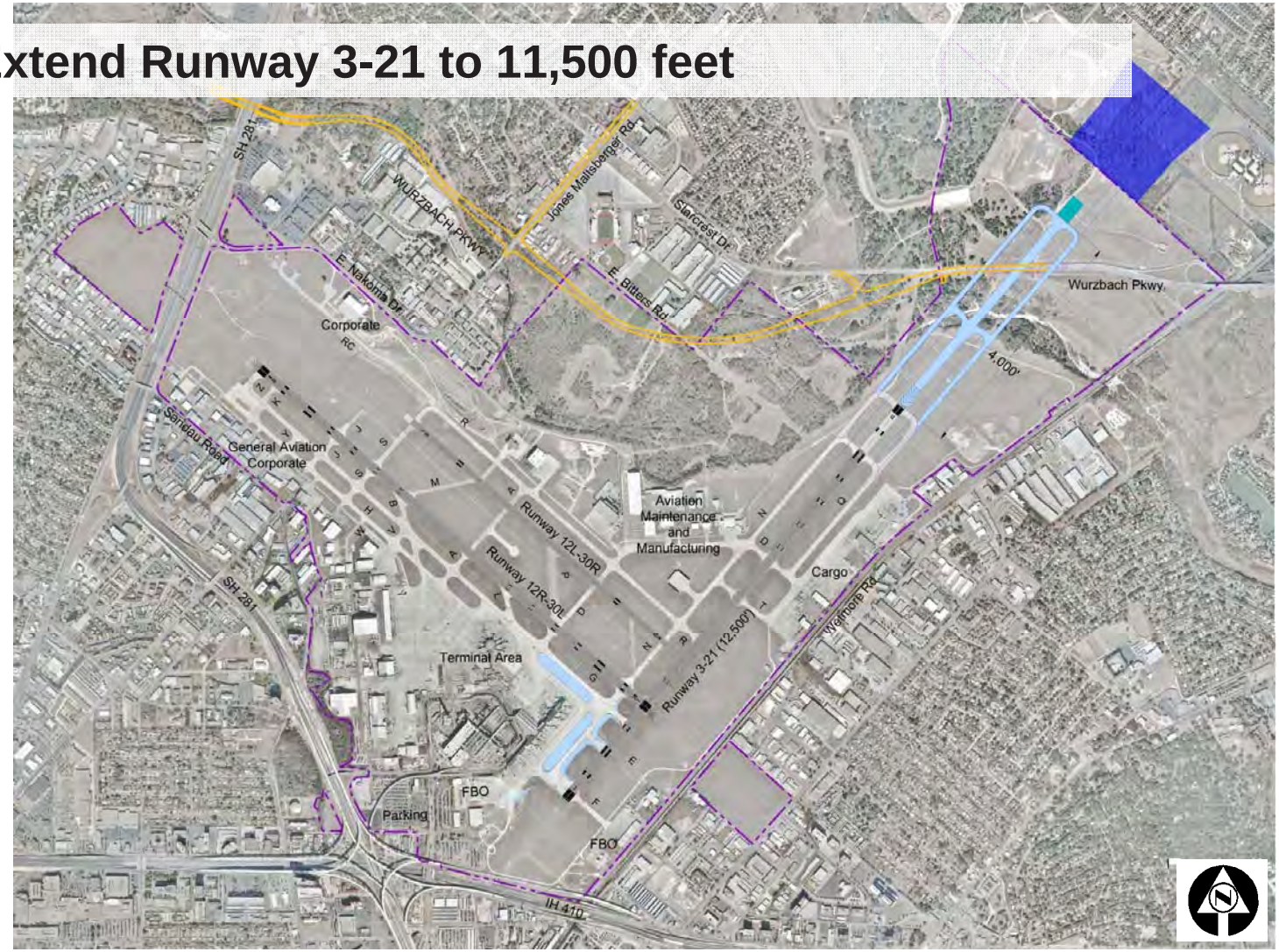
Alternative 5

SAN ANTONIO AIRPORT SYSTEM

Extend Runway 3-21 to 11,500 feet



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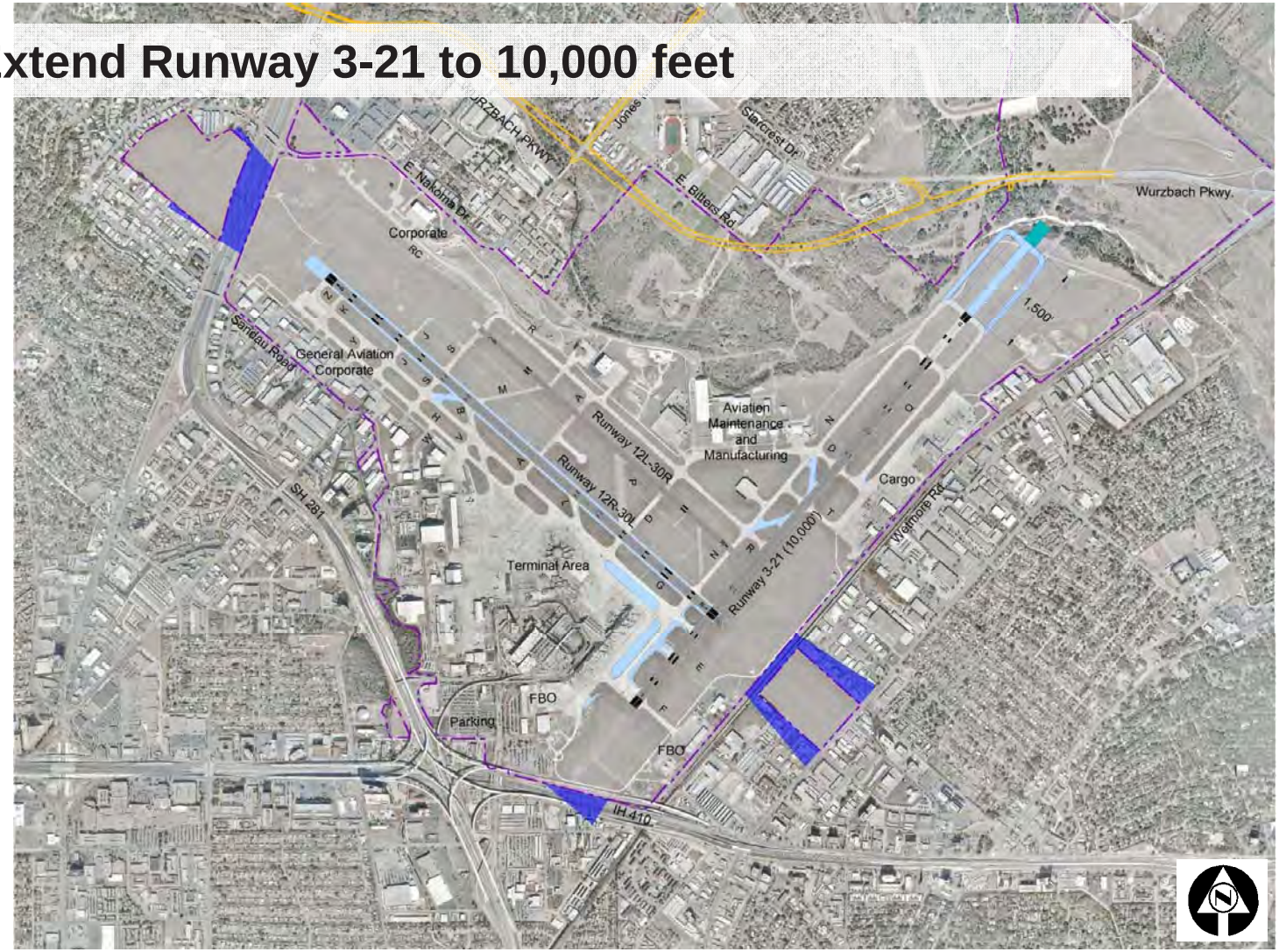
Alternative 6

SAN ANTONIO AIRPORT SYSTEM

Extend Runway 3-21 to 10,000 feet



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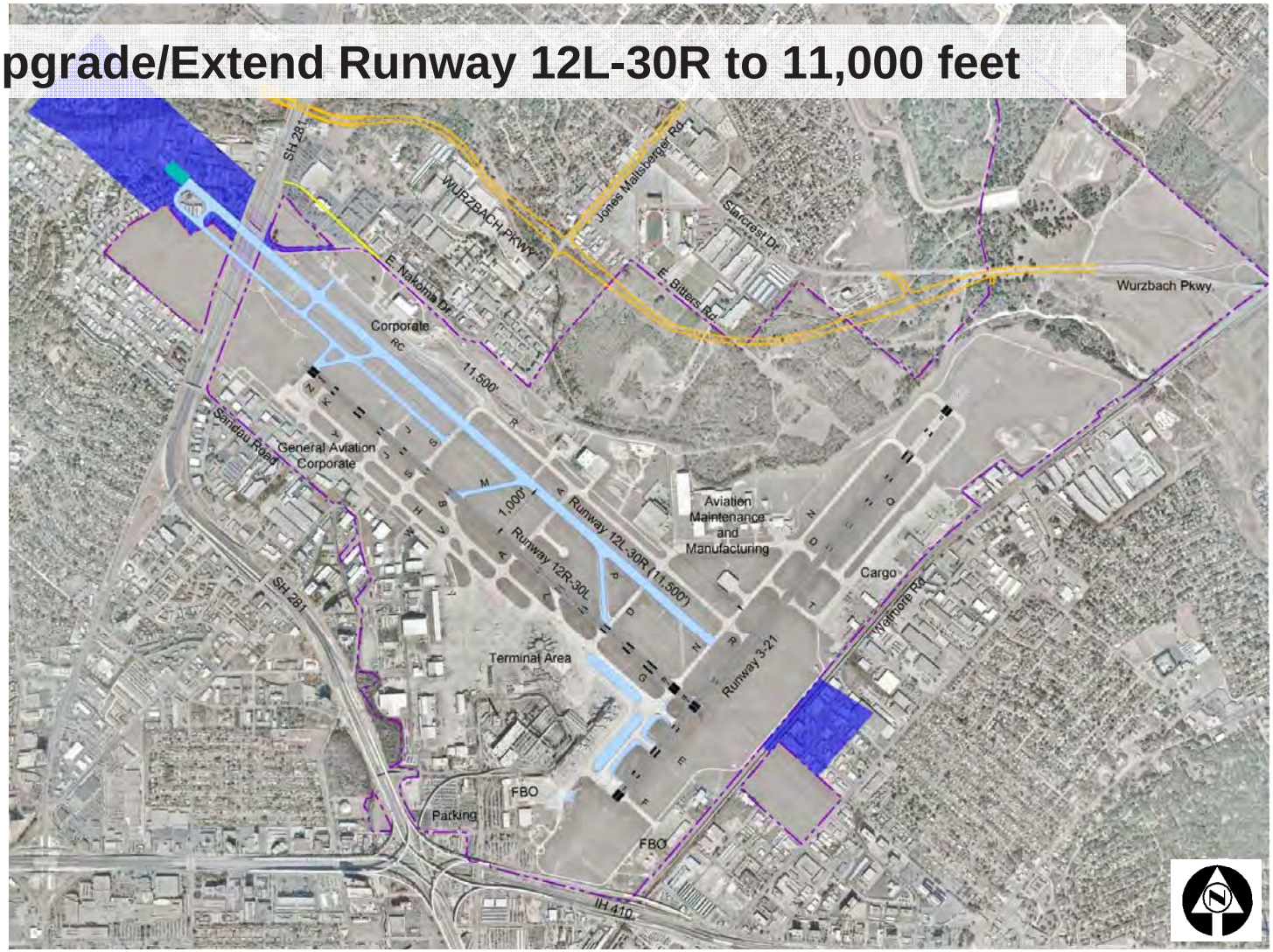
Alternative 7

SAN ANTONIO AIRPORT SYSTEM

Upgrade/Extend Runway 12L-30R to 11,000 feet



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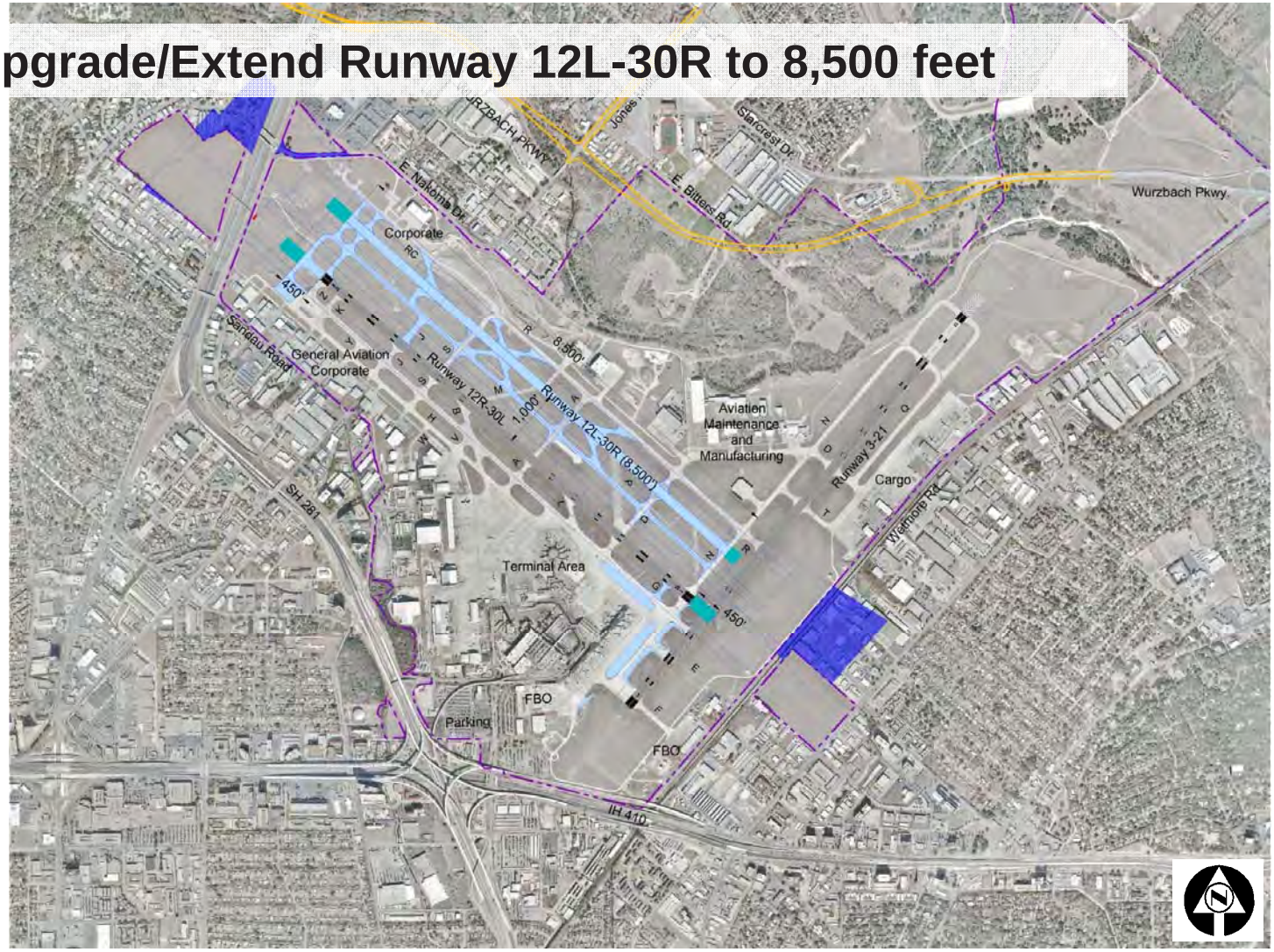
Alternative 8

SAN ANTONIO AIRPORT SYSTEM

Upgrade/Extend Runway 12L-30R to 8,500 feet



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Alternative 9

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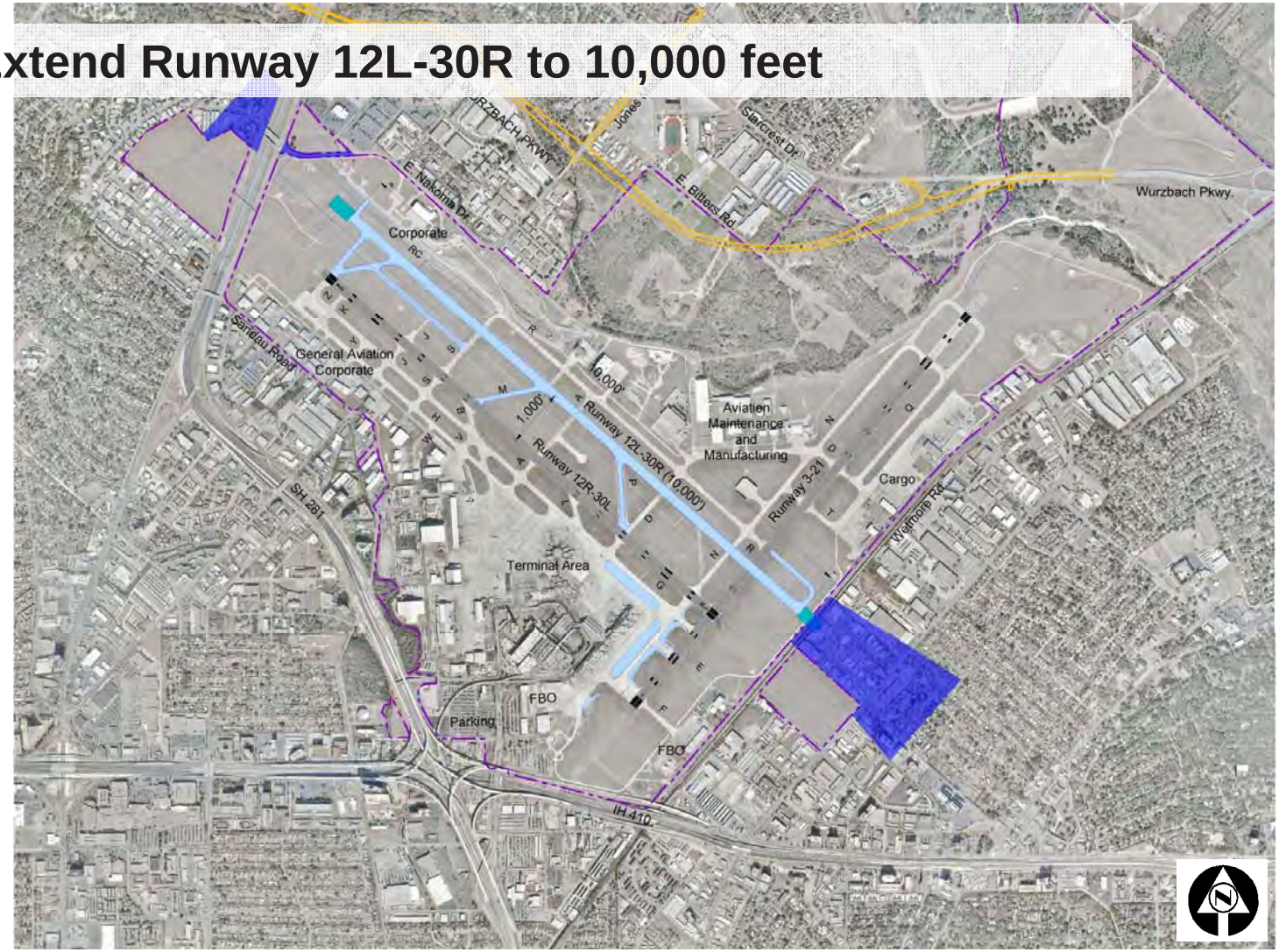
Extend Runway 12L-30R to 10,000 feet



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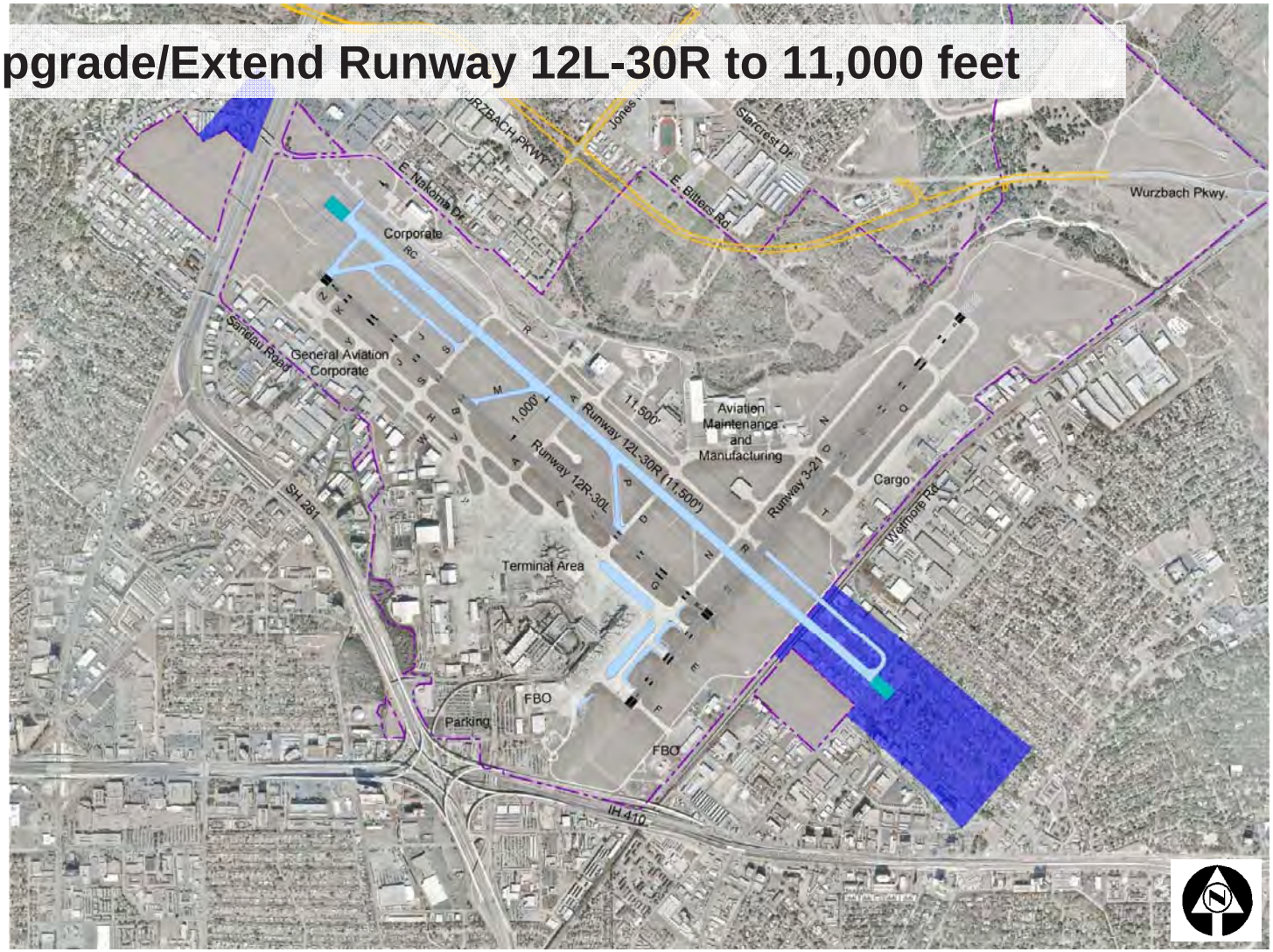
Alternative 10

SAN ANTONIO AIRPORT SYSTEM

Upgrade/Extend Runway 12L-30R to 11,000 feet



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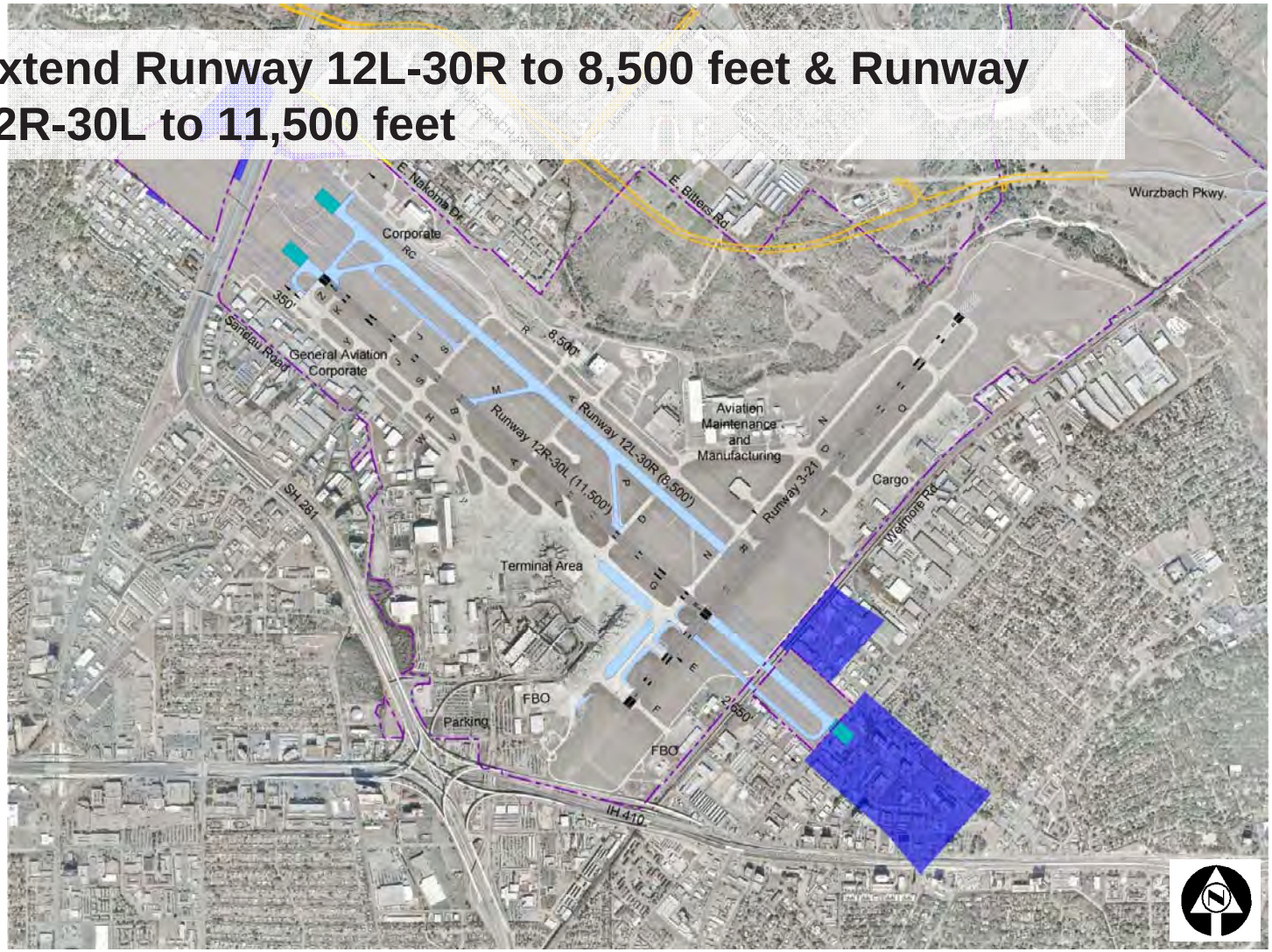
Alternative 11

SAN ANTONIO AIRPORT SYSTEM

Extend Runway 12L-30R to 8,500 feet & Runway 12R-30L to 11,500 feet



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Airfield Alternatives Evaluation

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9	Alt. 10	Alt. 11
Regional Socio/Economic Benefits											
Meets 2030 capacity needs	○	●	○	●	●	●	●	●	●	●	●
Allows long term growth for airfield	●	●	●	●	●	●	●	●	●	●	●
Meets runway length requirement	◐	○	◐	○	○	○	○	◐	○	○	○
Optimizes non-terminal land development	●	●	●	○	●	●	●	●	●	●	○
Access/impact to regional rail system	●	●	●	◐	●	●	●	●	◐	◐	◐
Financial Feasibility											
Capital investment requirement	●	◐	○	◐	◐	◐	◐	○	◐	◐	◐
Ability to develop incrementally	●	◐	○	◐	●	○	●	○	●	●	●
Requirement for land acquisition	●	◐	●	◐	○	●	◐	○	◐	◐	◐
Operational Efficiency											
Airfield configuration optimizes aircraft movement	○	○	○	○	○	○	●	○	○	○	●
Ease of maintenance	◐	◐	○	◐	○	○	●	●	●	●	●
Minimize impact of construction phasing	○	◐	◐	◐	○	○	◐	●	○	◐	◐
Environmental											
Impact on local community	●	◐	○	◐	●	●	◐	○	◐	◐	○
Preservation of open space	●	○	○	○	◐	◐	○	○	○	○	○




Alternatives 1, 6 and 8 are the preferred alternatives.

● Meets criteria
○ Neutral
◐ Does not meets criteria

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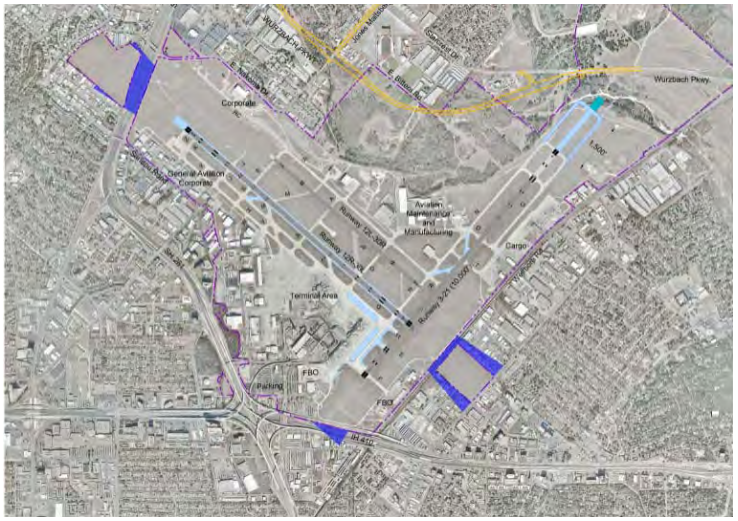
Short-listed Airfield Alternatives

Alternative 1
No Build – FAA Standards

Alternative 6
Extend 21 to 10,000 ft



Alternative 8
Extend 12L to 8,500 ft

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Recommended Airfield Alternative

Runway 12L-30R:

-Upgrade to air carrier runway

-8,500 feet long by 150 feet wide

-Build new full-length parallel taxiway

Runway 12R-30L:

-Add runway shoulders

-Remove intersection with Runway 3-21 by relocating Runway 30L threshold 450 feet

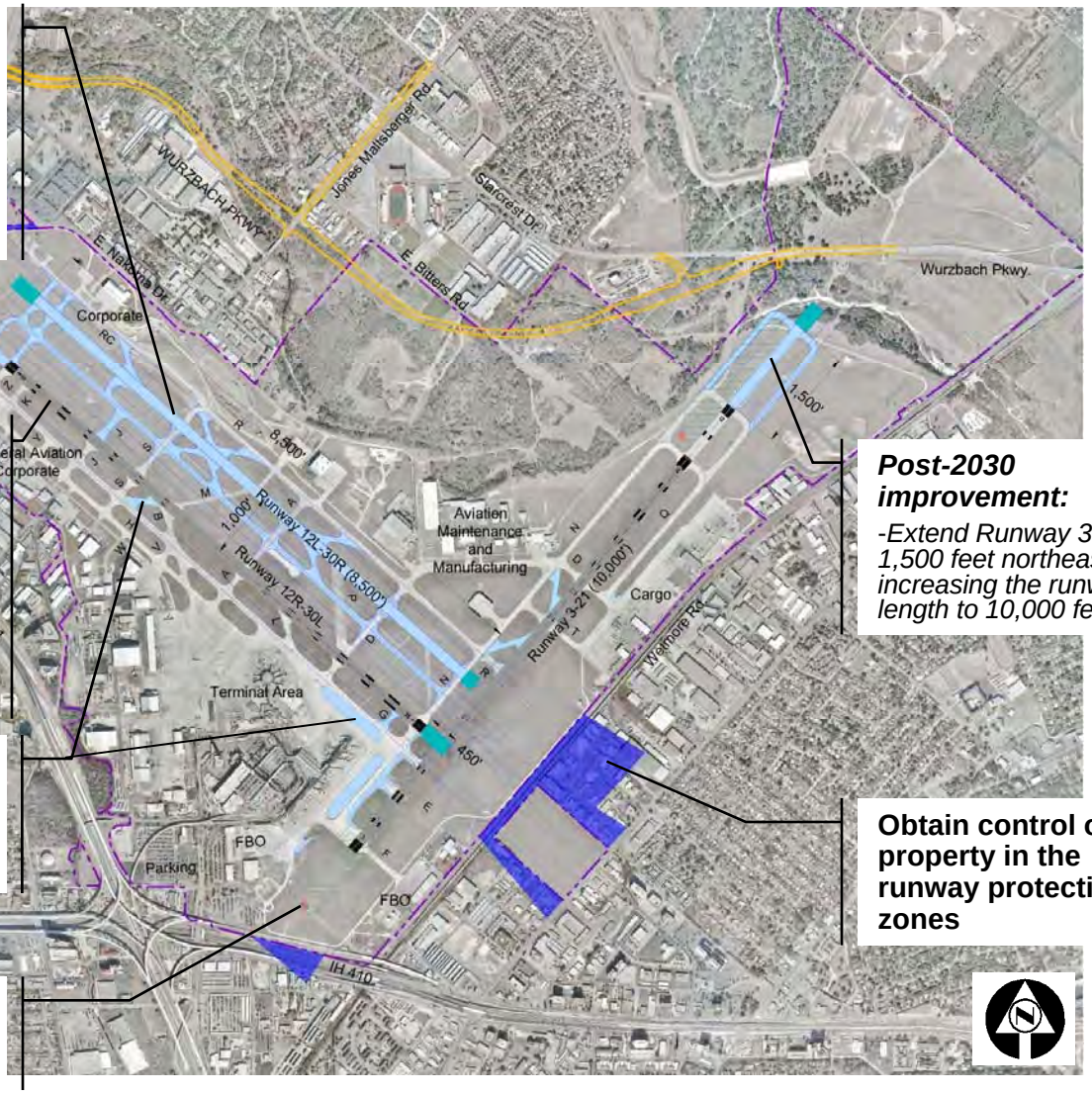
- Extend 450 feet north to provide 8,500 feet of runway length

Taxiway system improvements

Incl. improvements as part of FAA RSAT initiative

Navigational aids:

-Instrument landing system (CAT I) on Runway 21



Post-2030 improvement:

-Extend Runway 3-21 1,500 feet northeast, increasing the runway length to 10,000 feet

Obtain control of property in the runway protection zones

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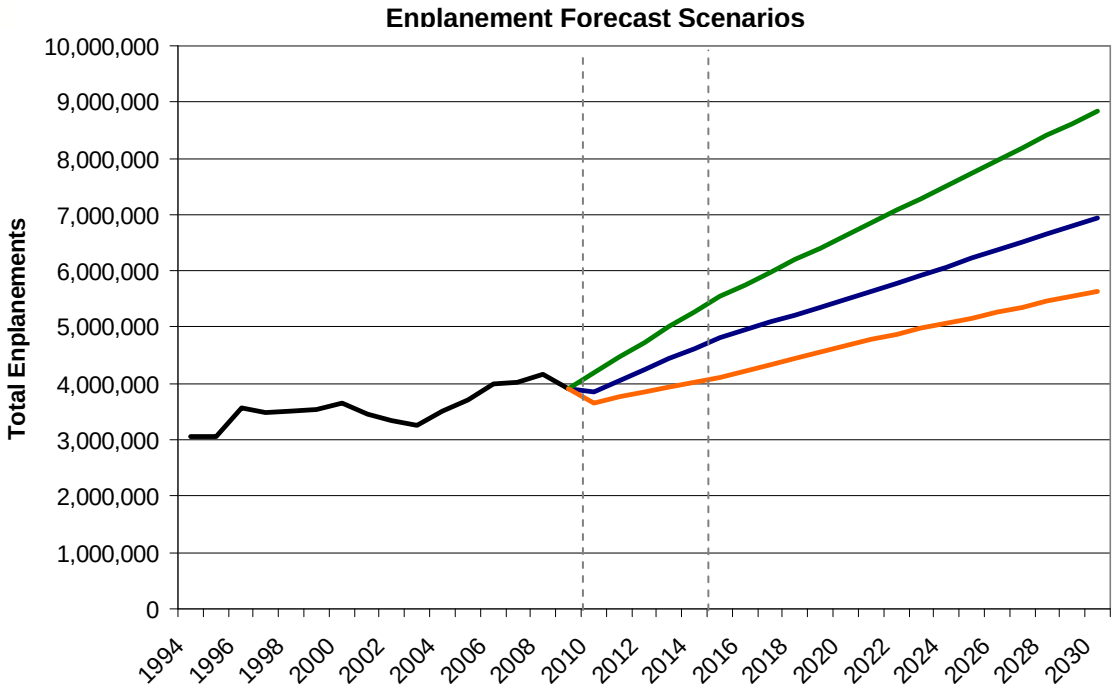
Terminal Alternatives

- Aviation Forecast Results
- Terminal Facility Requirements
- Baseline Terminal Facilities
- Terminal Development Alternatives
- Alternatives Evaluation
- Recommended Alternative
- Short-Term Concourse A Improvements

Enplanement Forecasts



Baseline forecast projects a recovery to 2008 levels by 2012.

4.5% growth from 2010 through 2015.

Return to average historical growth rates after 2015

DOMESTIC VS. INTERNATIONAL ENPLANEMENT FORECASTS

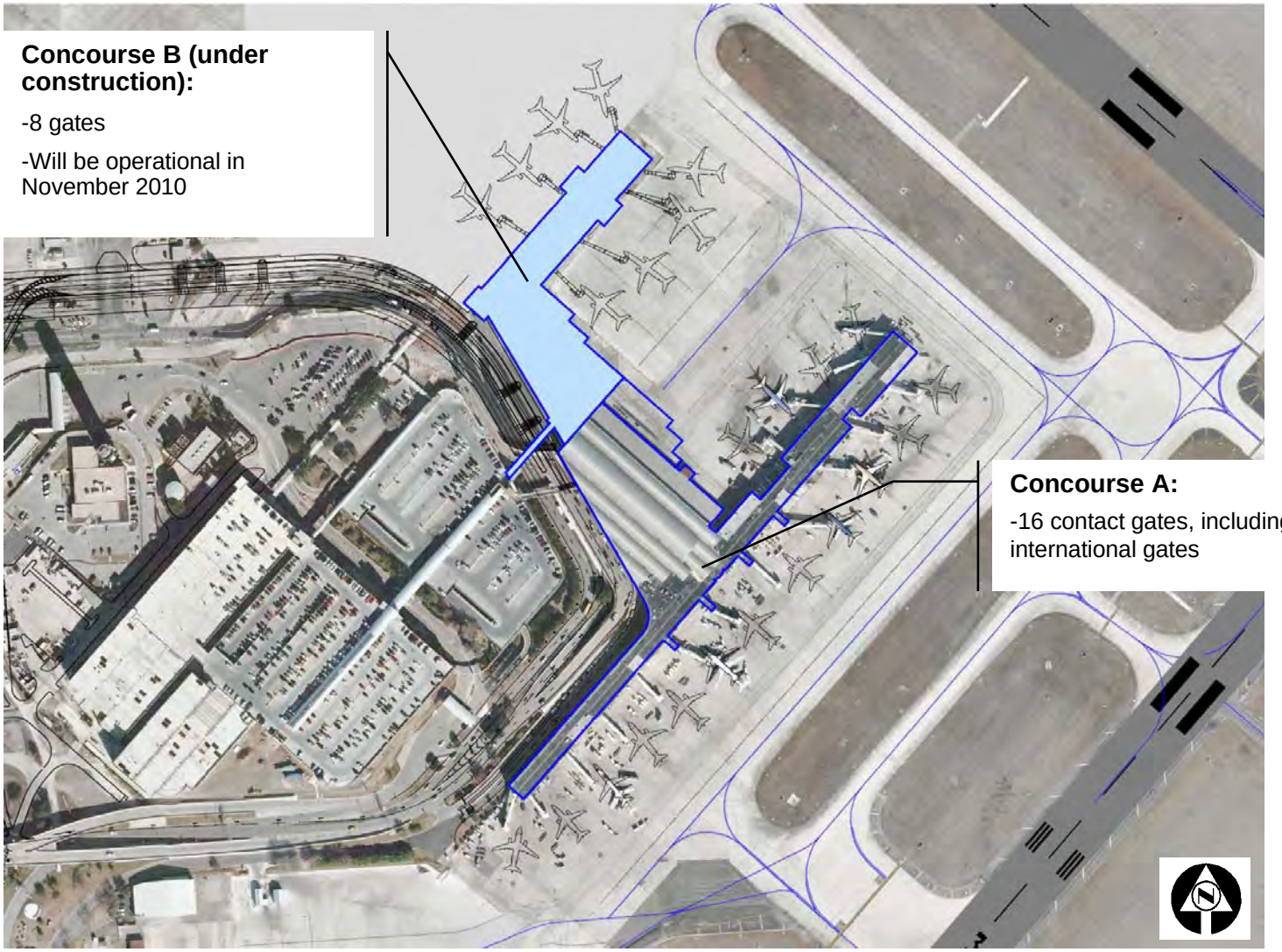
Forecast	2009	Projections				Annual Growth Rate
		2010	2015	2020	2030	2009-2030
Baseline	**3,905,439**	**3,863,000**	**4,814,000**	**5,500,000**	**6,940,000**	**2.8%**
Domestic	3,834,745	3,794,000	4,600,000	5,236,000	6,549,000	2.6%
International	70,694	69,000	214,000	264,000	391,000	8.5%
High-growth	**3,905,439**	**4,197,000**	**5,547,000**	**6,625,000**	**8,848,000**	**4.0%**
Domestic	3,834,745	4,064,000	5,265,000	6,235,000	8,357,000	3.8%
International	70,694	133,000	282,000	390,000	491,000	9.7%
Low-growth	**3,905,439**	**3,668,000**	**4,105,000**	**4,687,000**	**5,647,000**	**1.8%**
Domestic	3,834,745	3,599,000	3,981,000	4,445,000	5,327,000	1.6%
International	70,694	69,000	124,000	242,000	320,000	7.5%

Peak Period Demand Forecast

PEAK PERIOD DEMAND FORECAST					
Forecast	2009	Projections			
		2010	2015	2020	2030
Annual enplanements	3,905,439	3,863,000	4,814,000	5,500,000	6,940,000
Peak month enplanements	375,205	360,940	449,800	513,990	648,440
Peak hour enplanements	1,420	1,366	1,702	1,945	2,454

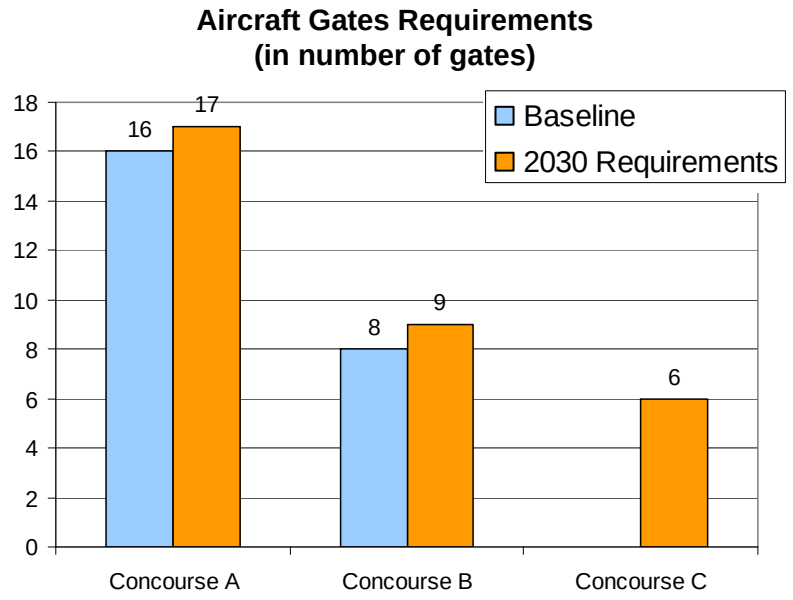
The number of enplanements for the peak hour of an average day of the peak month will increase from its current level of 1,420 enplanements to 2,454 in 2030.

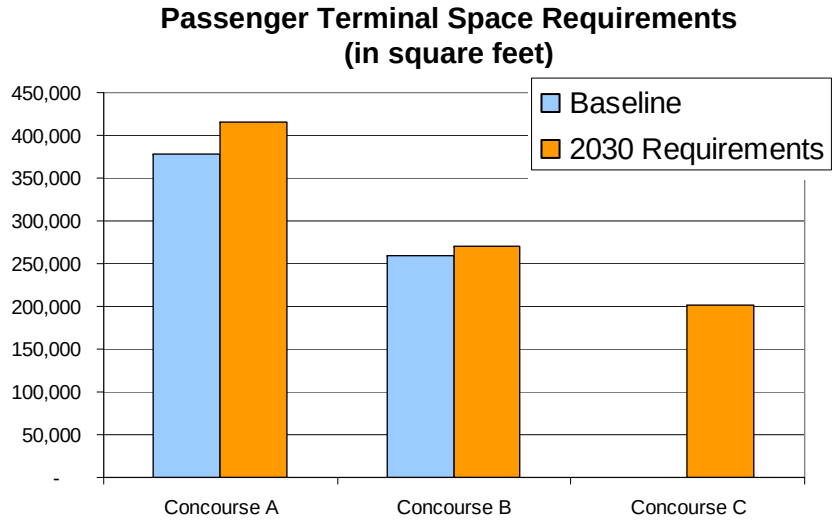
Baseline Terminal Facilities



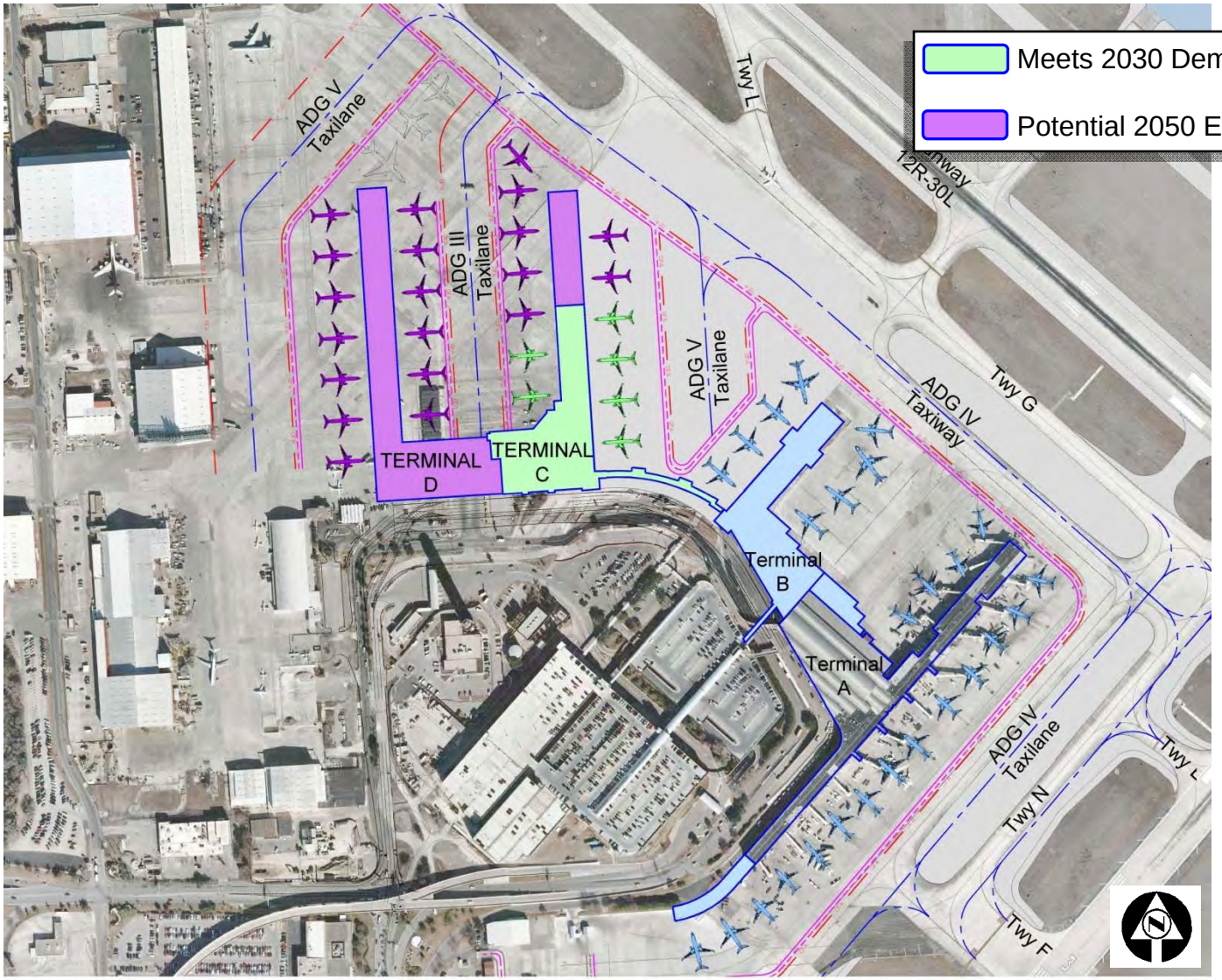
Terminal Complex Requirements

- **Aircraft gates**
  - Baseline: 24 contact gates (16 in Concourse A and 8 in Concourse B)
  - 2030 requirements: 32 gates total
- **Passenger terminal space**
  - Targeted improvements to Concourse A to accommodate increased demand
  - Concourse B meets 2030 facility requirements as designed
  - New concourse needed after 2020





Alternative 1



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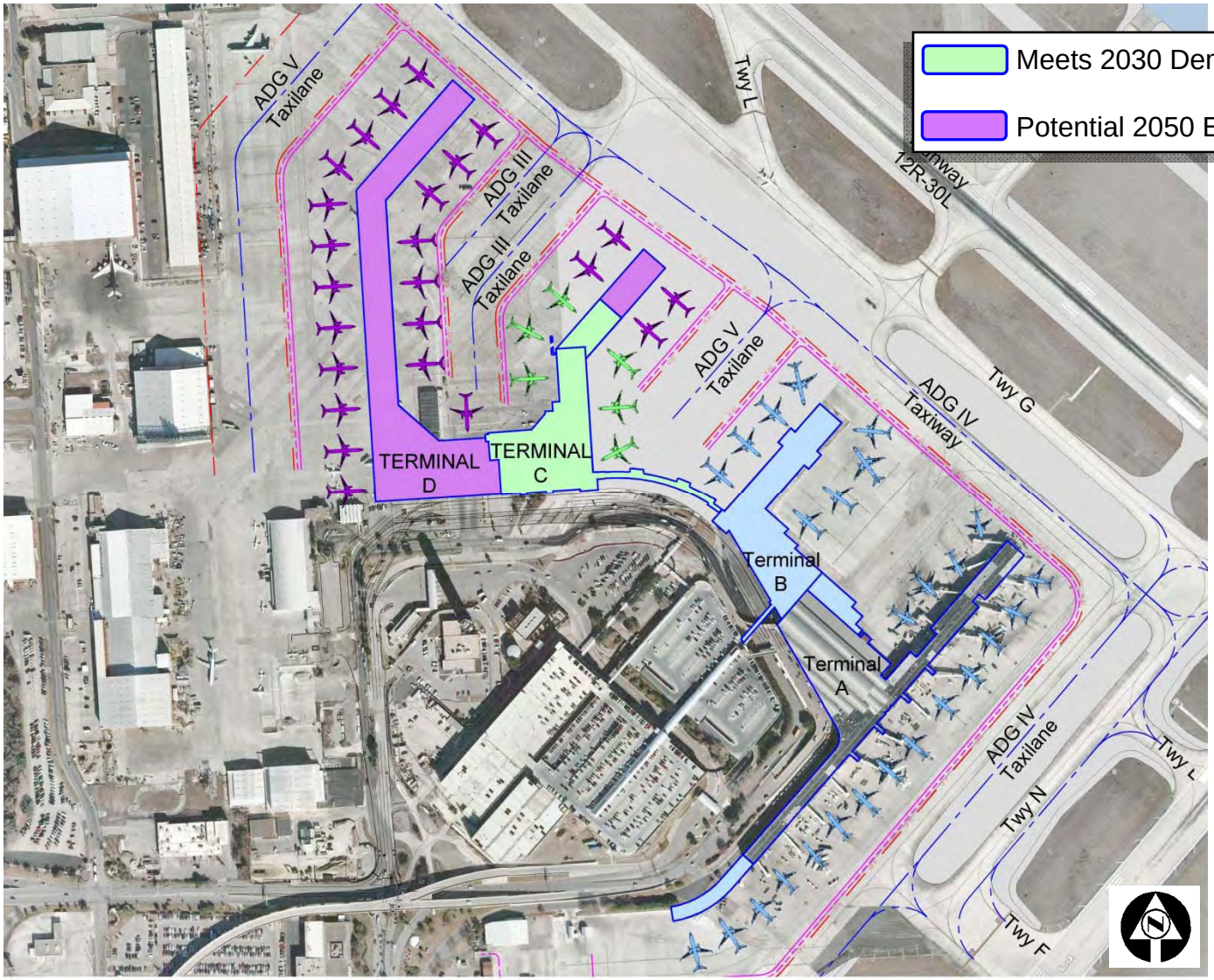
Alternative 2



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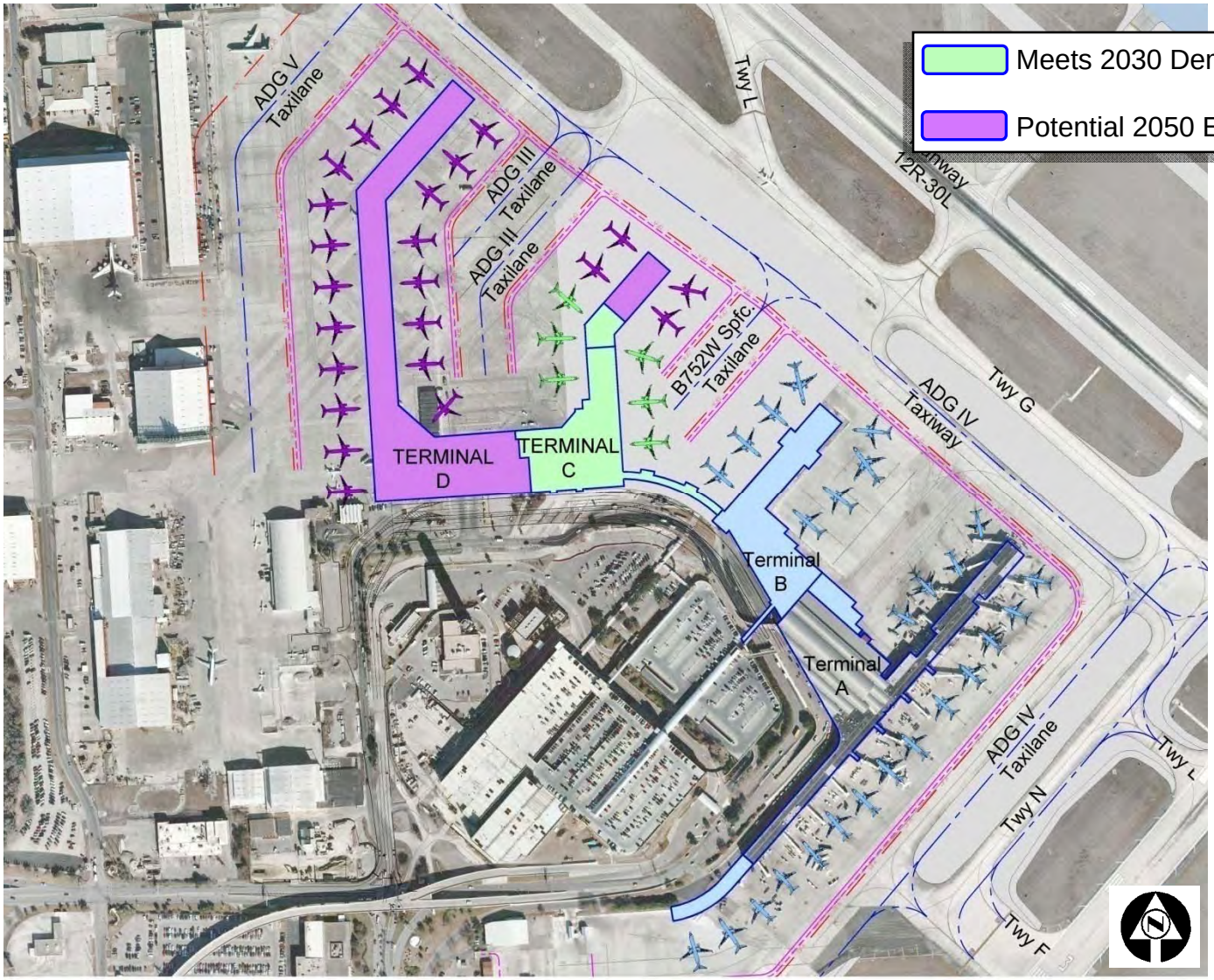
Alternative 3



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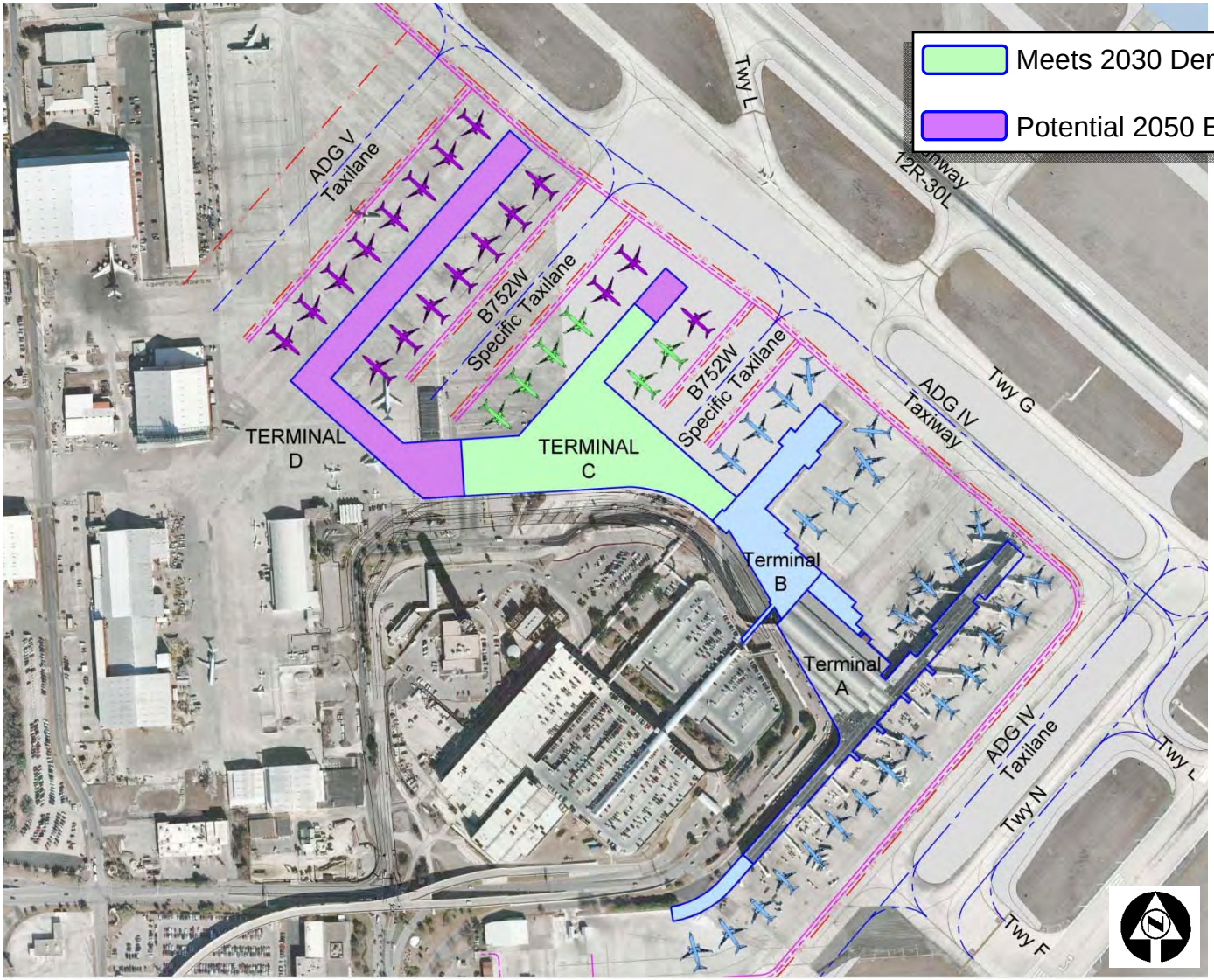
Alternative 4



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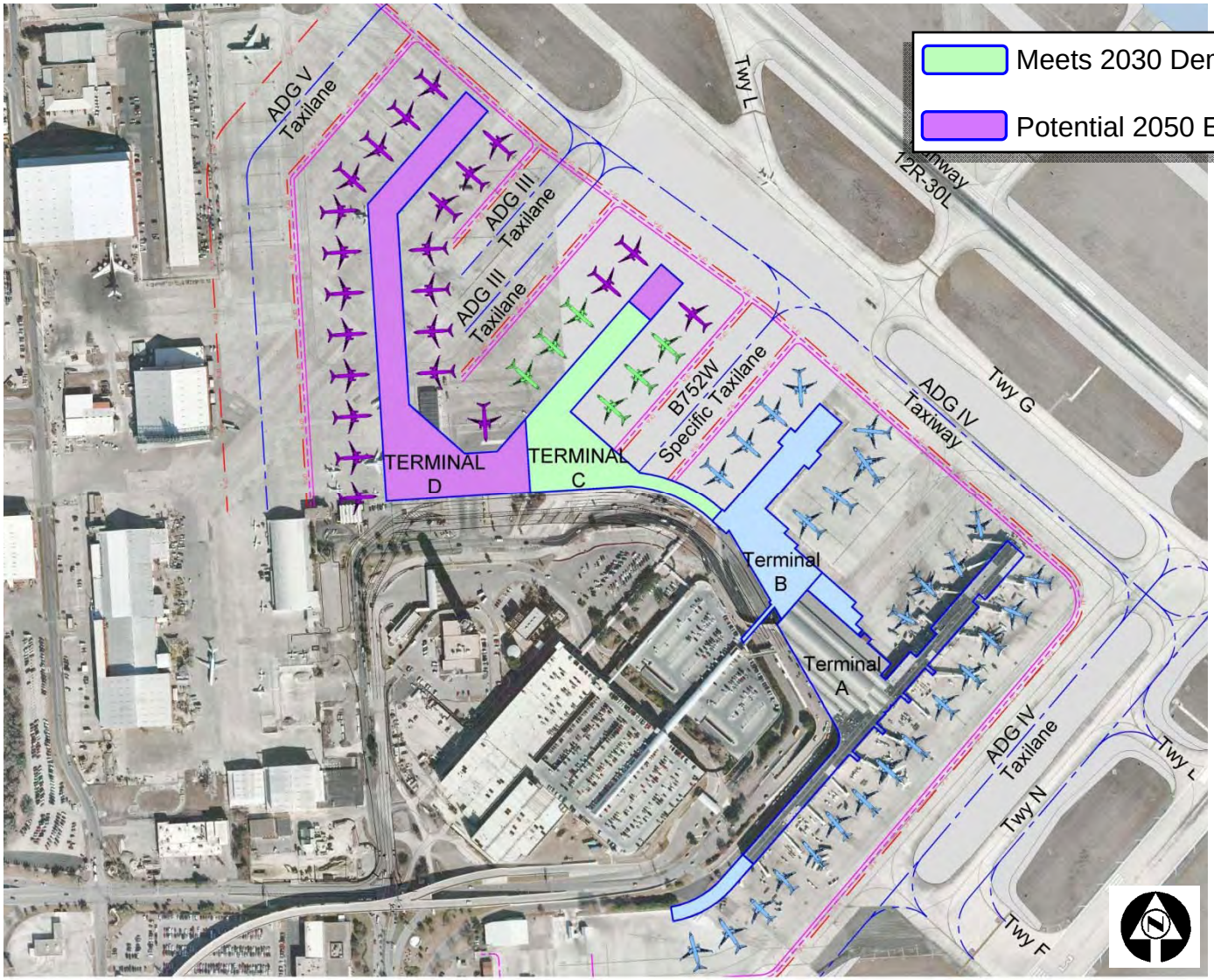
Alternative 5



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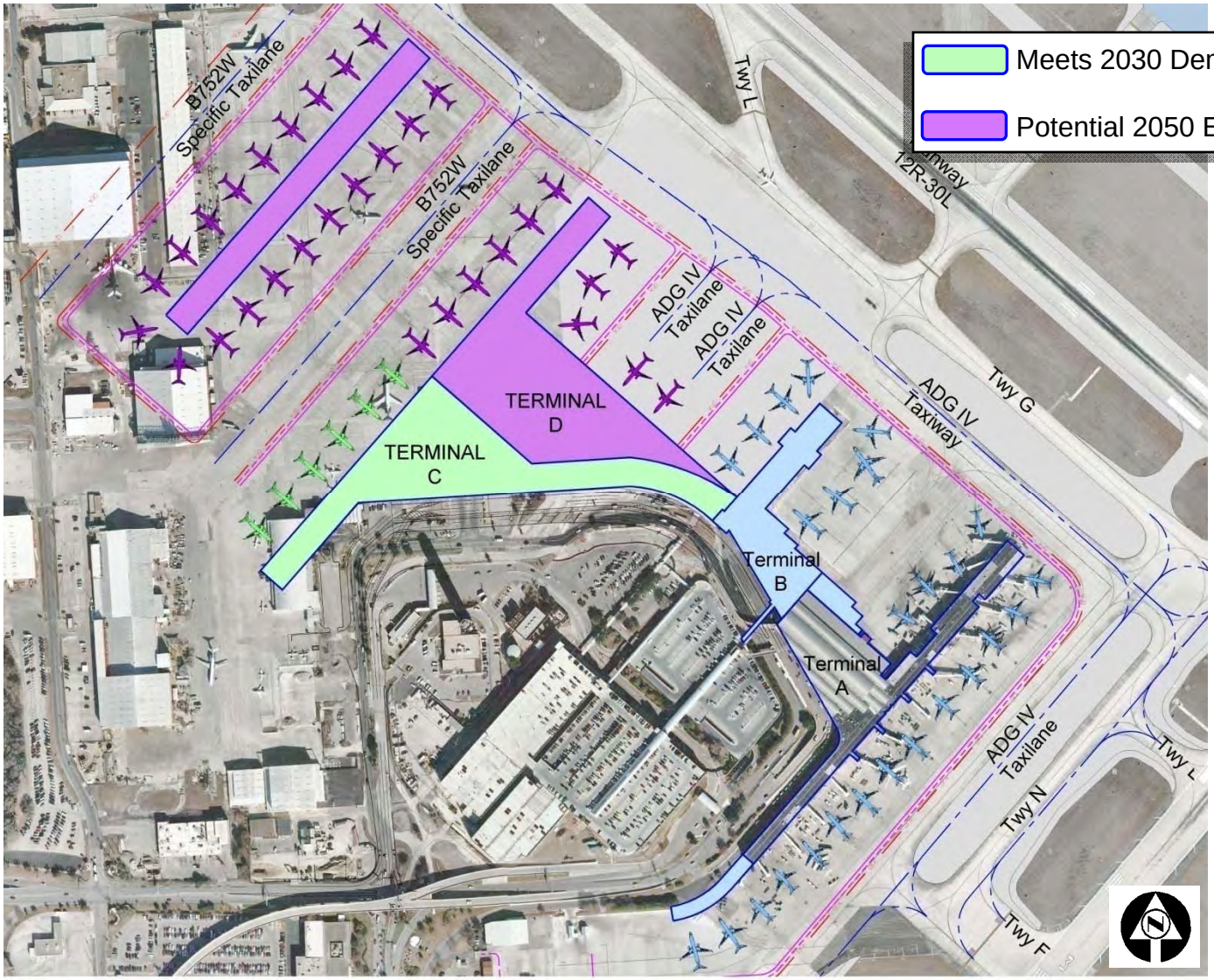
Alternative 6



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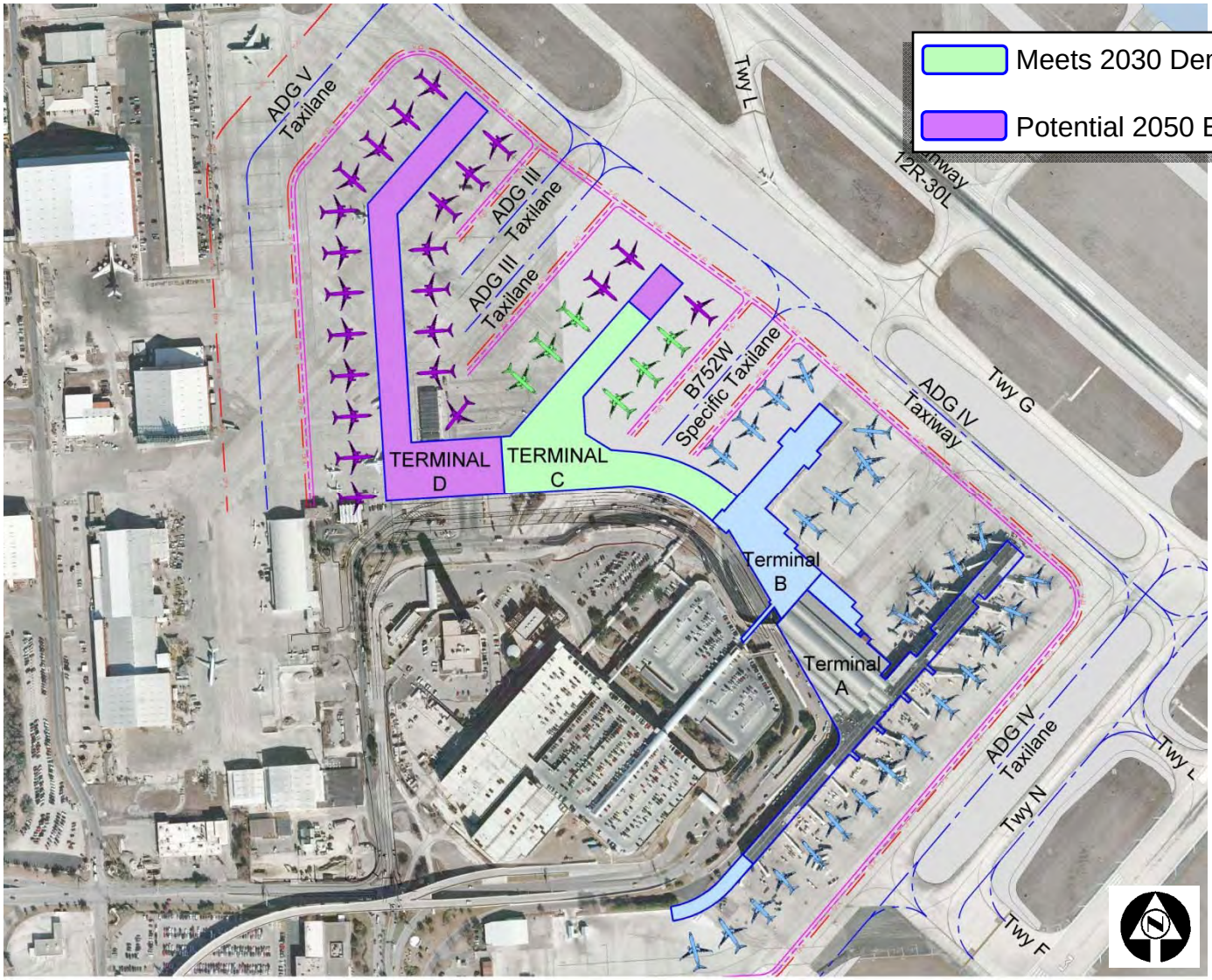
Alternative 7



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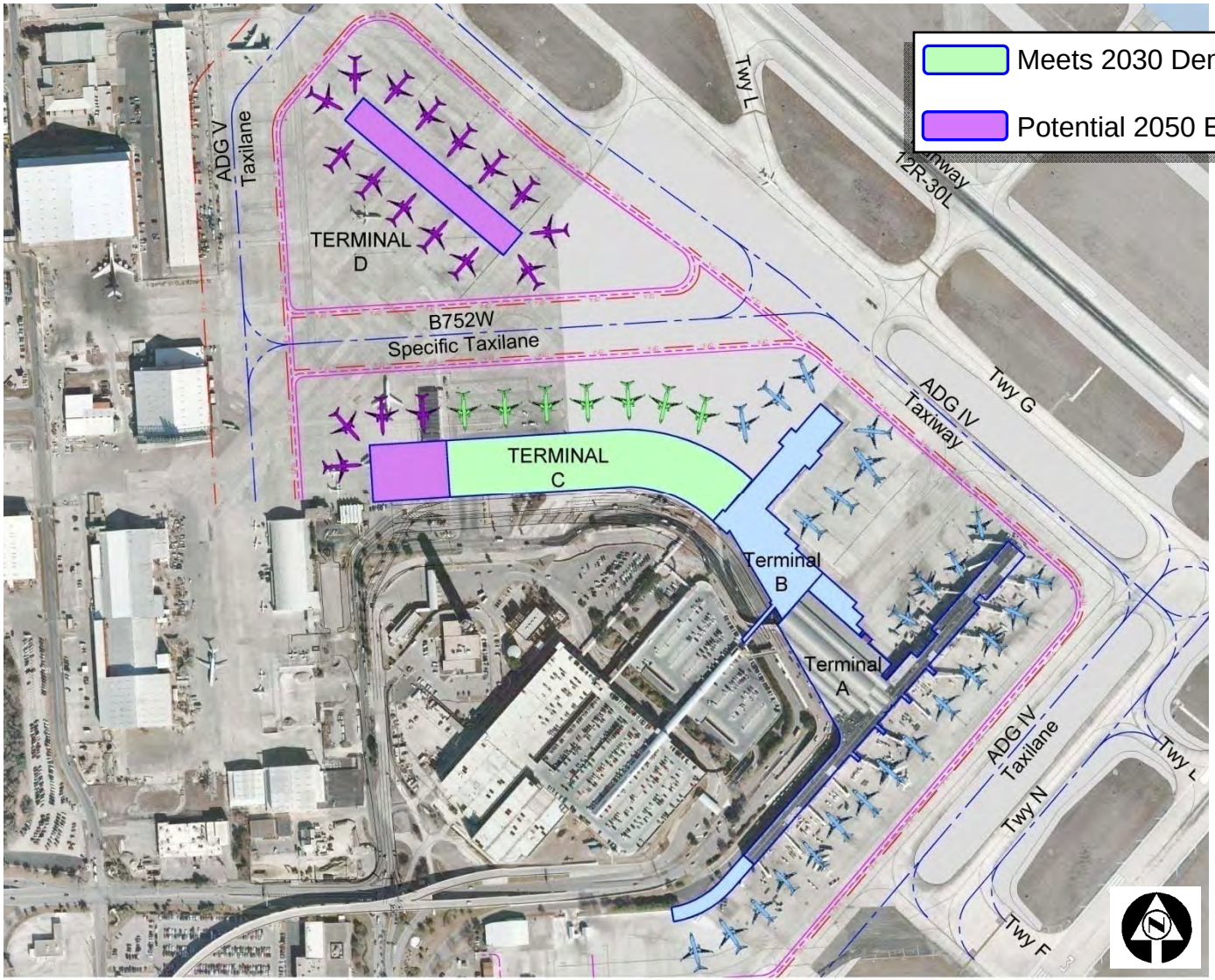
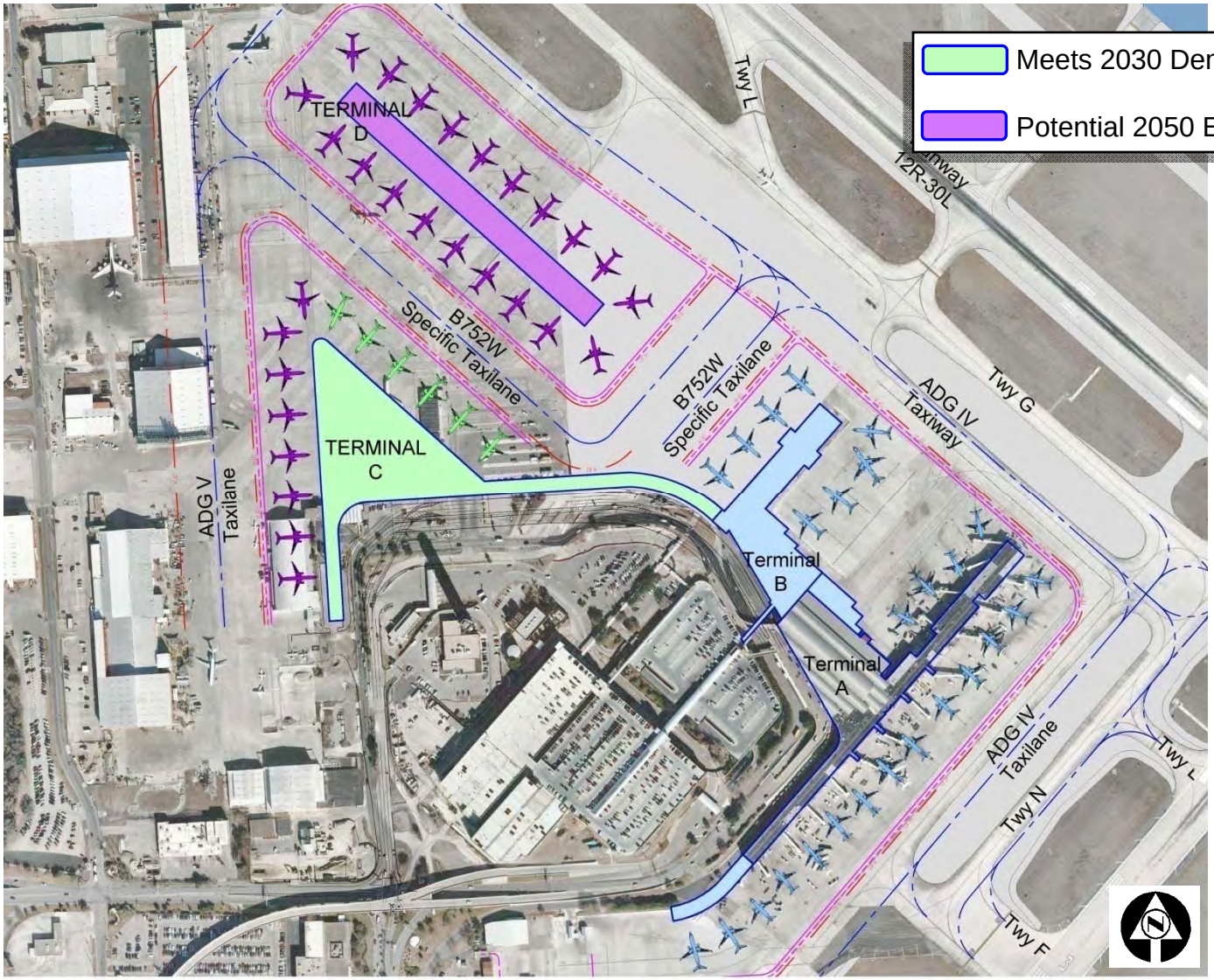
Alternative 8



Alternative 9



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Short-listed Terminal Alternatives




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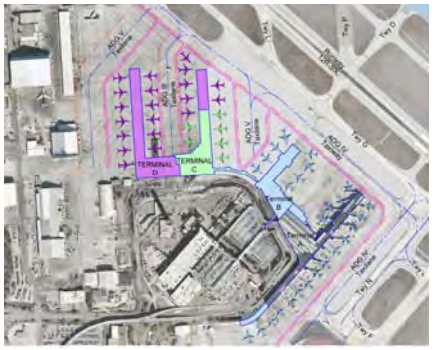
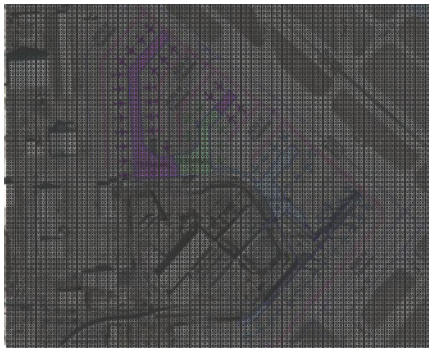
Alternative 1



Alternative 2



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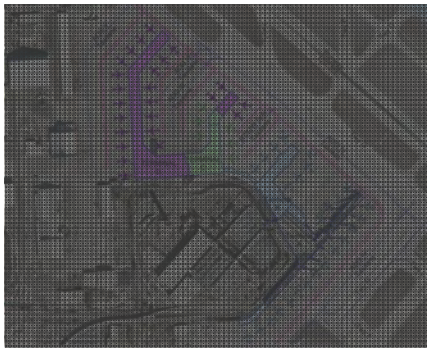

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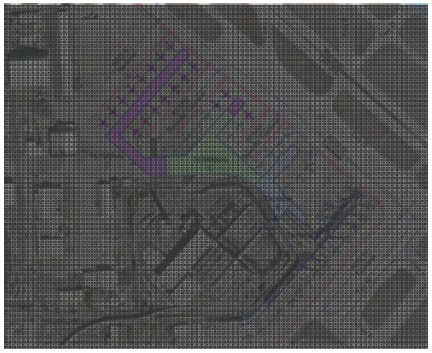
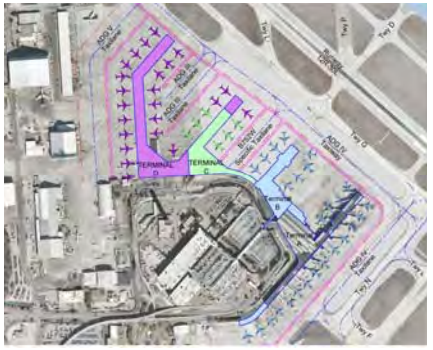
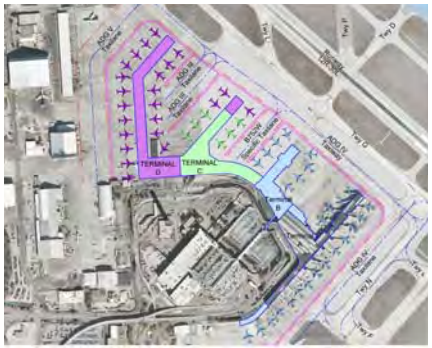


Alternative 5

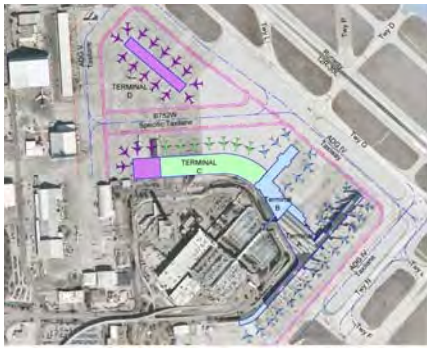


Alternative 6

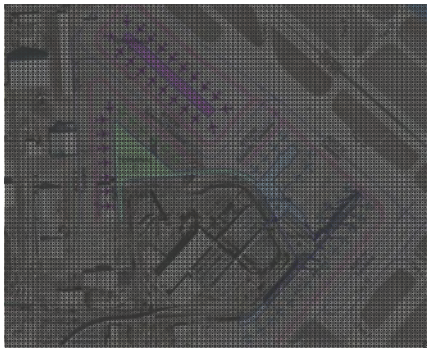
Alternative 7



Alternative 8



Alternative 9



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Terminal Alternatives Evaluation

	Alt.1	Alt.5	Alt.6	Alt. 7	Alt. 8
Regional Socio/Economic Benefits					
Meets 2030 capacity needs	●	●	●	●	●
Allows long term growth for terminal/airfield	○	○	○	○	●
Optimizes non-terminal land development	○	○	○	○	○
Provides opportunity to serve as regional gateway	○	●	●	○	○
Access/impact to regional rail system	○	○	○	○	○
Financial Feasibility					
Capital investment requirement	○	○	●	○	●
Ability to develop incrementally	●	●	●	●	●
Opportunities for non-airline revenues	●	○	●	○	○
Requirement for land acquisition	○	○	○	○	○
Operational Efficiency					
Airfield configuration optimizes aircraft movement	○	●	○	●	●
Promotes airline staff efficiency	○	○	●	●	●
Roadways, curbside, parking meet capacity needs	○	○	○	○	○
Ease of maintenance	○	○	●	○	●
Flexibility of facility for multiple users	○	○	●	○	●
Minimize impact of construction phasing	○	●	●	○	●
Customer Service					
Minimizes walking distances / vertical movements	○	○	●	○	●
Sufficient space for passenger processing	○	○	○	○	○
Allows for intuitive wayfinding	○	○	●	●	●
Access to rental car facility(ies)	○	○	○	○	○
Environmental					
Reuse of existing facilities	●	●	○	○	○
Impact on local community	○	○	○	○	○

- Alternative 7 was recommended:
  - Creates a sense of one unified terminal
  - Exceeds forecast gate requirement
  - Provides efficient aircraft movement capabilities
  - Cost effective
  - Construction can be implemented in several phases as gate demand increases

● Meets criteria
○ Neutral
● Does not meets criteria




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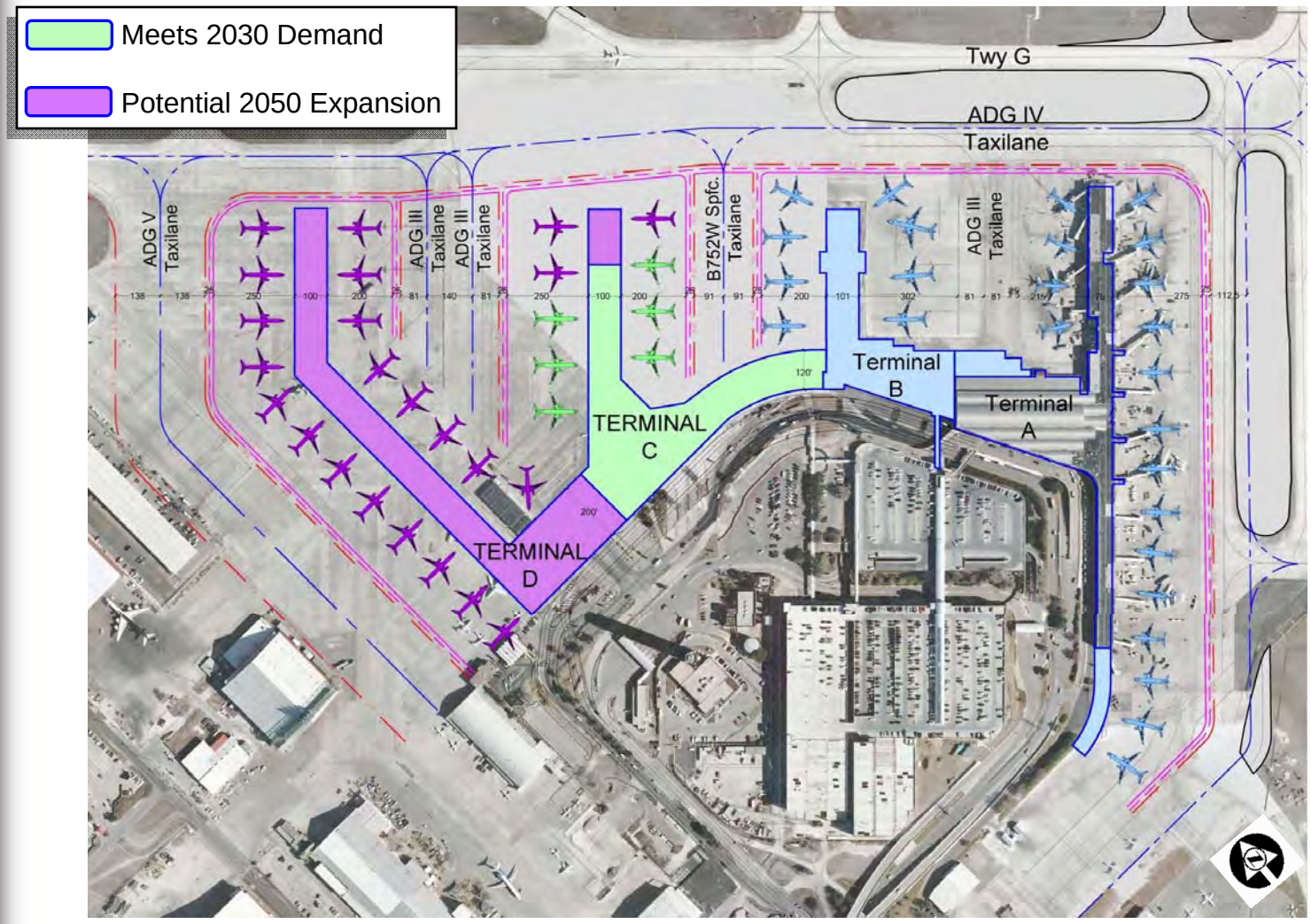
Recommended Terminal Alternative



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Terminal / Concourse A Recommended Improvements

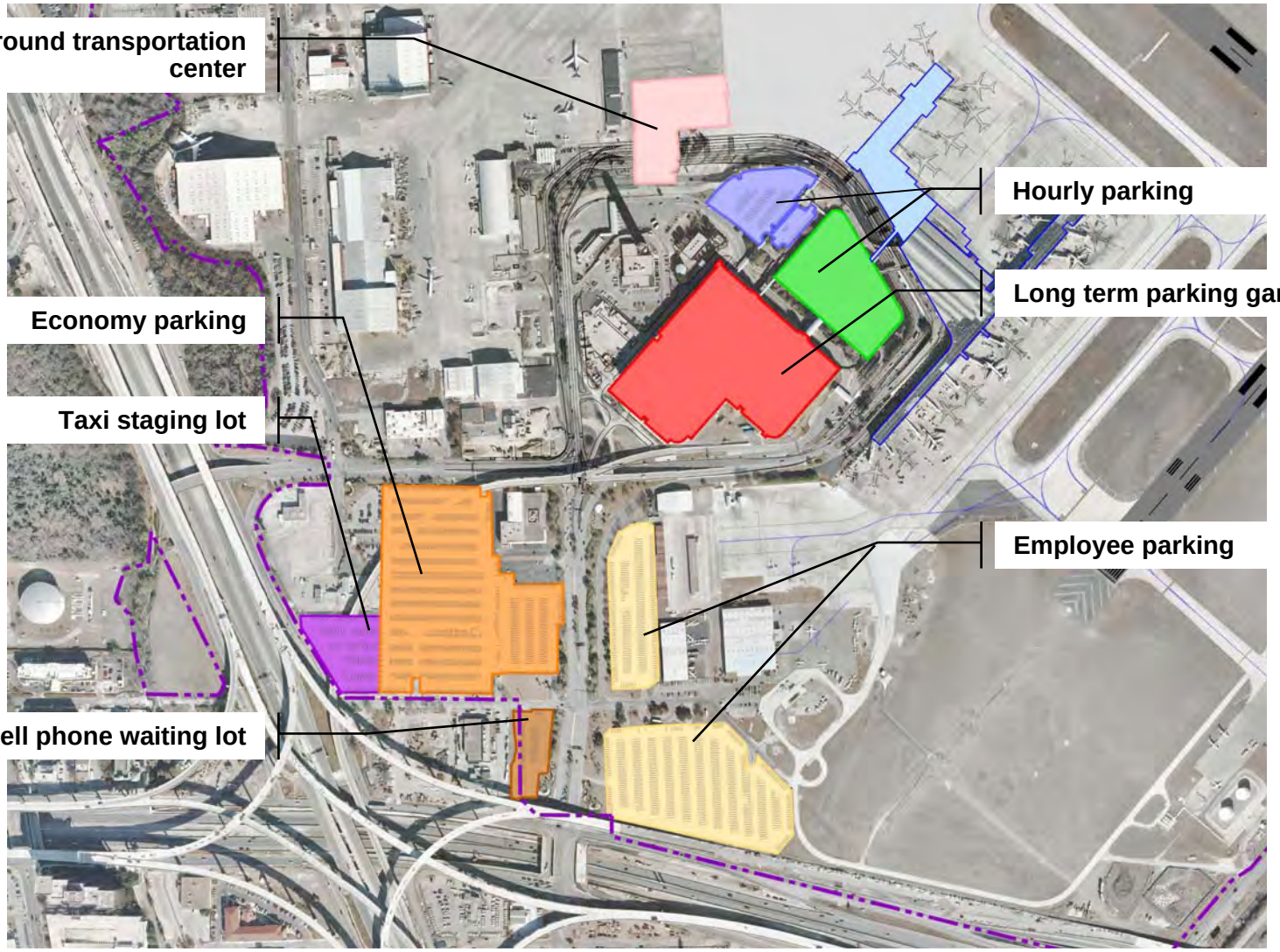
- **Recommended areas for improvement in Terminal / Concourse A will be addressed in follow-on study**
- **Analysis will focus on:**
  - Security screening checkpoints
  - Passenger circulation
  - Concessions
  - Gates
  - Baggage claim




Landside Alternatives

- Landside Facility Requirements
- Baseline Landside Facilities
- Facilities Alternatives Evaluation
- Recommended Alternative
- Surface Parking Expansion Recommendations

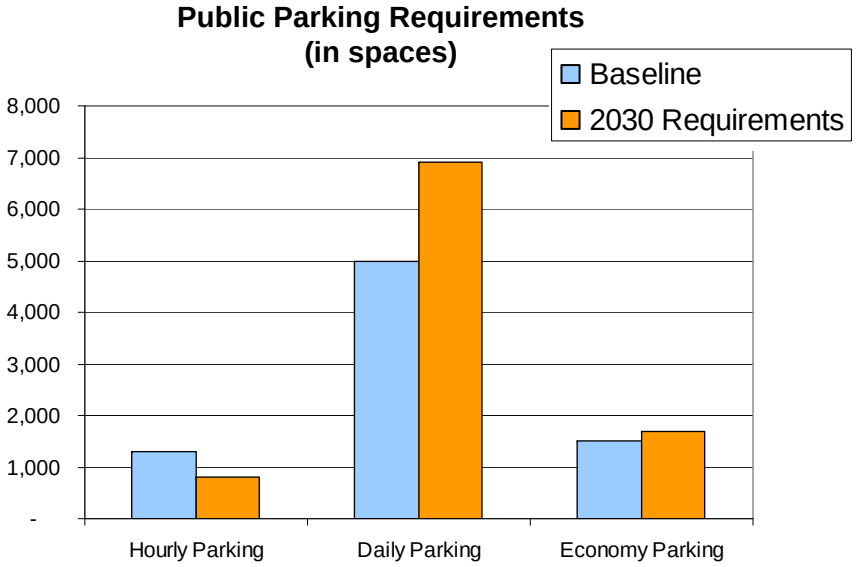
Baseline Landside Facilities



Landside Requirements

- **Rental car facilities**
  - Airport should implement a consolidated rental car facility (CONRAC) to improve passenger level of service.
  - AECOM Team concurs with previous analysis recommending the rental car facility to be located inside the terminal roadway loop
- **Access and perimeter roadways and curbside facilities:**
  - Planned roadway improvements, currently under construction, will be able to accommodate the anticipated 2030 demands
- **Public parking**
  - 2,300 new spaces required in daily and economy lots by 2030
  - Hourly parking is adequate

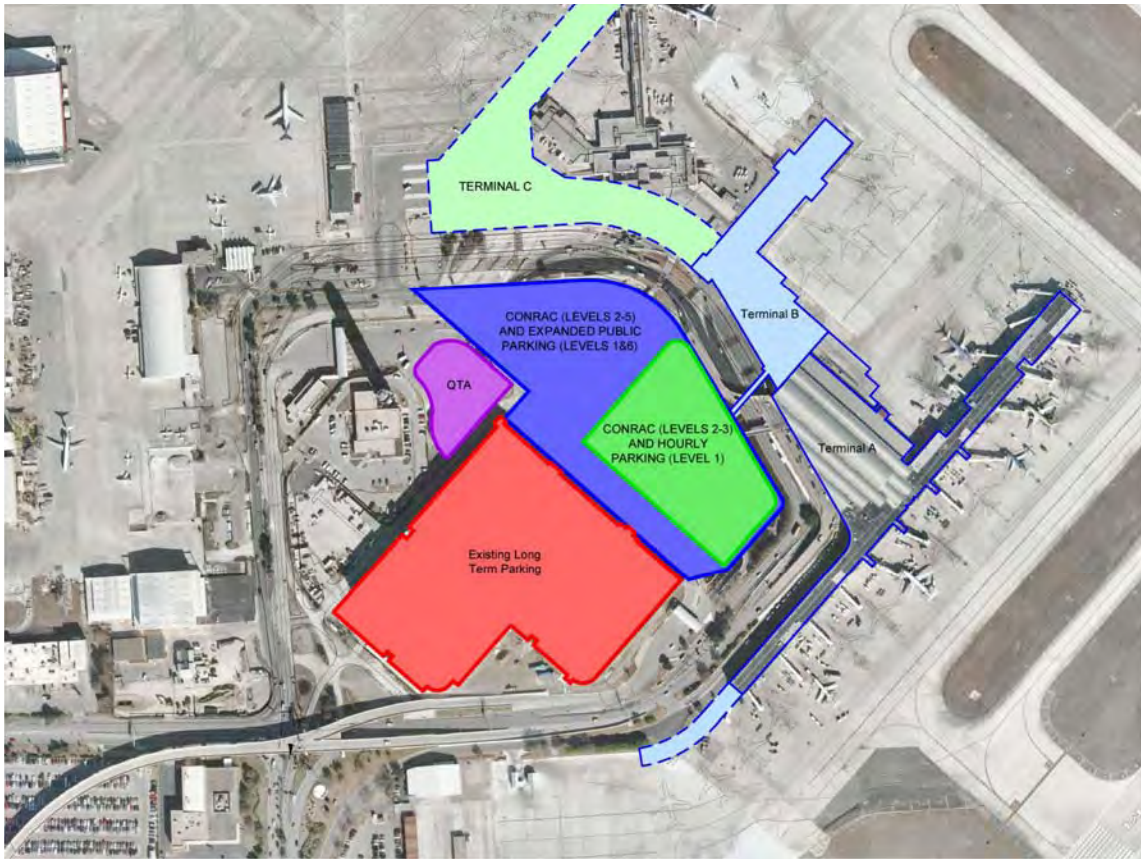


CONRAC Configurations Evaluation (1)

- **Alternative 1 – Remove current hourly parking garage**
  - Meets 2030 requirements
  - Compatible with airspace restrictions
  - More operational flexibility in arranging rental car company spaces, with more contiguous areas available on three complete levels versus two complete levels and two half levels in Alternative 2.

CONRAC Configurations Evaluation (2)



- **Alternative 2 – Keep current hourly parking garage**
  - Meets 2030 requirements
  - Compatible with airspace restrictions
  - Cost efficient
  - Faster to build than Alternative 1

CONRAC Configurations Evaluation (3)

- **Alternative 3 – No Build**
  - Does not meet 2030 requirements, requiring customers to use off-airport parking

    → significant loss of revenue for the Airport
- **Alternative 2 is recommended**

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Parking Expansion Recommendations

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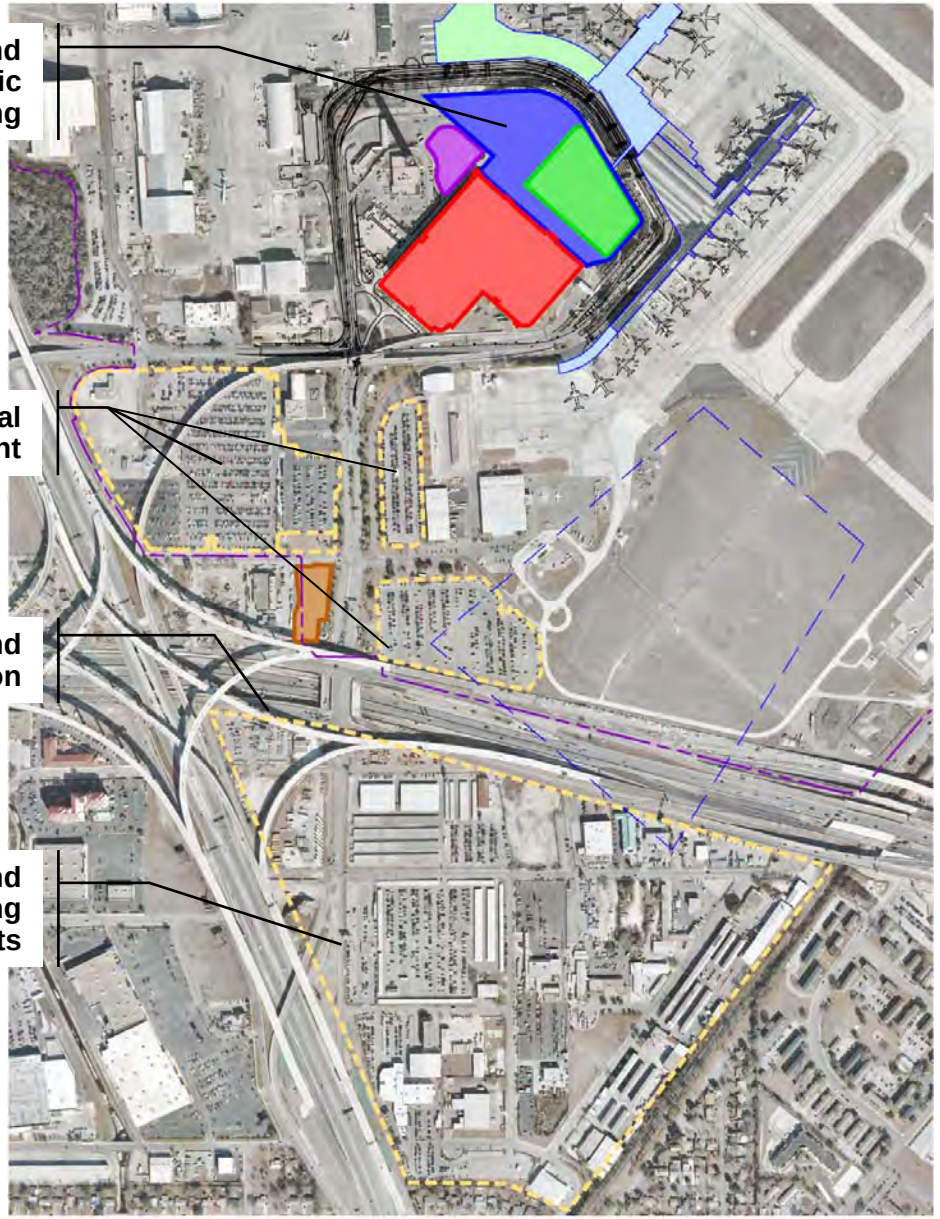

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Preliminary Recommendation

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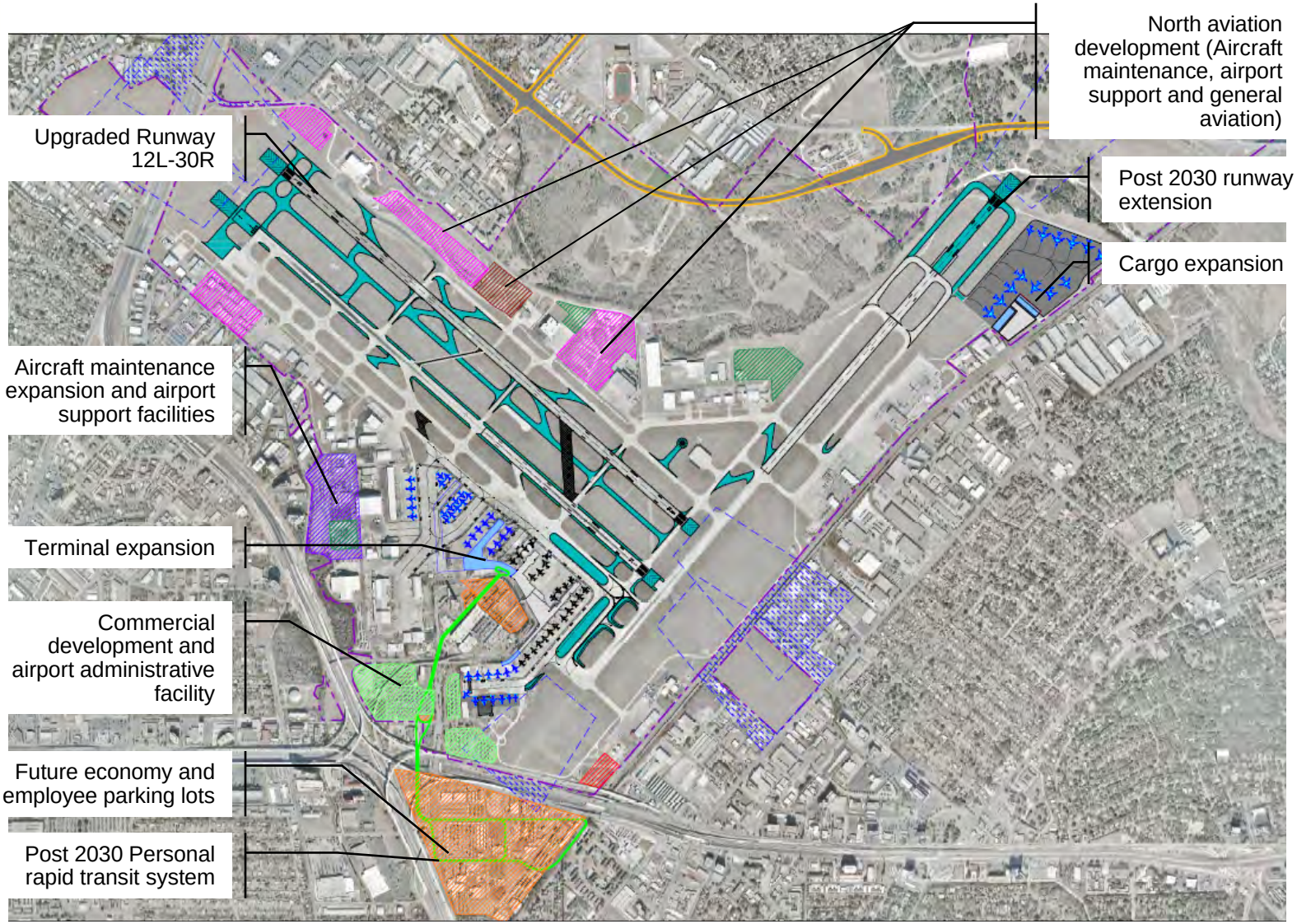
Preliminary Recommendation



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Public Meeting Outreach Coordination

Upcoming Meetings

- **Public Outreach**
  - First public meeting to be held on May 27th




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Next Steps

- Implementation Plan
- Environmental Analysis
- Financial Feasibility Analysis
- Upcoming Meetings

Project Schedule Summary

Task	2009 1 May	2 Jun.	3 Jul.	4 Aug.	5 Sep.	6 Oct.	7 Nov.	8 Dec.	2010 9 Jan.	10 Feb.	11 Mar.	12 Apr.	13 May	14 Jun.	15 Jul.	16 Aug.	17 Sep.	18 Oct.	19 Nov.	20 Dec.
NEEDS																				
1. Visioning and Existing Conditions																				
2. Aviation Demand Forecast																				
3. Facility Requirements																				
SOLUTIONS																				
4. Alternatives Development and Evaluation																				
5. Facilities Implementation Plan																				
6. Financial Feasibility Analysis																				
DOCUMENTATION																				
7. Final Project Documentation																				

Today

Legend:

- Project Task Duration
- Ad-Hoc Regional Committee
- Technical Advisory Committee Meeting
- Community Advisory Committee Meeting

Project Introduction, Goals & Objectives

Goals & Objectives, Facility Requirements

Alternatives Analysis, Recommended Concept

Financial Feasibility, Environmental Analysis

Recommended Plan, Final Vision

Next Steps

- **Implementation Plan**
  - Finalize the recommended development plan
  - Determine the phasing of the recommended improvements. Timing of projects will be based upon appropriate activity triggers.
  - Develop cost estimates
- **Environmental Analysis**
- **Financial Feasibility Analysis**
- **Committee Meetings**
  - Next committee meetings to be scheduled in August - September




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Thank You!

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